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INTRODUCTION.

This REVIEW is based on reports for June, 1893, from 3,056 regular and voluntary observers. These reports are classified as follows: 166 reports from Weather Bureau stations; 46 reports from United States Army post surgeons; 2,099 monthly reports from state weather service and voluntary observers; 31 reports from Canadian stations; 209 re-

ports through the Southern Pacific Railway Company; 505 marine reports through the co-operation of the Hydrographic Office, Navy Department; marine reports through the "New York Herald Weather Service"; monthly reports from local services established in all states and territories; and international simultaneous observations. Trustworthy newspaper extracts and special reports have also been used.

CHARACTERISTICS OF THE WEATHER FOR JUNE, 1893.

The month was warmer than usual from the interior of the middle Atlantic and New England states over the Lake region, the upper Mississippi valley, Minnesota, and the Dakotas and thence over the middle and southern Rocky Mountain and southern plateau regions. At stations in northern New England, western New York, the upper lake region, the Dakotas, and the Southwest the month was the warmest June on record. The month was cooler than usual along the New England coast, in the Southern States east of Texas, along the Pacific coast, and over the middle and northern plateau and northern Rocky Mountain districts. At points on the New England coast, and from the north Pacific coast over the northern Rocky Mountain region the month was the coolest June on record. At stations in southern New England, eastern New York, New Jersey, eastern Pennsylvania, and in the Red River of the North Valley and the west-central states the maximum temperature was the highest ever reported for June.

Frost was reported in New England on the 8th and 29th, in central Ohio and Lower Michigan on the 7th. Frost was also noted in Minnesota, North Dakota, the middle and northern Rocky Mountain and plateau regions, and the interior of the middle and north Pacific coast districts.

Hot winds damaged crops and grass in central Nebraska on the 7th, in parts of South Dakota on the 17th and 18th, and in North Dakota on the 19th and 23d. On the latter-named date a hot southwest wind prevailed at Dodge City, Kans., and the temperature reached 106°, the highest reading on record for June at that station.

PRECIPITATION.

The precipitation of the month was unevenly distributed. From the middle Mississippi valley to the South Carolina and Georgia coasts, from eastern Nebraska to the eastern Texas and western Louisiana coasts, in the lower valley of the Red River of the North, and along the immediate north Pacific coast there was a marked excess in monthly precipitation. At stations in southeastern Virginia and eastern

South Carolina the monthly rainfall was the greatest ever noted for June. Over portions of the middle Atlantic and New England states, the Ohio, Mississippi, and Missouri Valleys, and the Rocky Mountain and plateau regions less than the usual amount of rain fell. At stations in the lower lake region, the middle Missouri valley, New Mexico, Idaho, and eastern Washington the monthly precipitation was the least on record for June. Drought prevailed in western New York, western Maryland, northern Wisconsin, central Minnesota, and eastern South Dakota, and in Idaho and Colorado. On the ranges of central and south-central Texas, Utah, and southeastern Arizona stock suffered severely, owing to a scarcity of water and grass. Snowfall was reported only in the mountains of Colorado and at Hot Springs, Nev.

STORMS.

The most destructive storms of the month visited Iowa, Missouri, and Kansas on the 21st. On that date a tornado swept over the section about Perry and Williamstown, Kans., killing ten persons and destroying considerable property. On the 2d two persons were killed by a tornado near Spanish Camp, Tex. The afternoon of the 4th a thunderstorm of unusual severity visited Saint Louis, Mo. Severe thunderstorms were noted most frequently in Missouri, Nebraska, Michigan, Illinois, Florida, Ohio, and New York, where they occurred on six to eight dates.

FLOODS.

The month opened with the lower Mississippi River above the danger-line. At Cairo, Ill., the river reached a stage of 43.3 feet, 3.3 feet above the danger-line, on the 6th. At Memphis, Tenn., the maximum stage, 33.5 feet, 0.5 foot above the danger-line, was reported from the 11th to the 14th. At New Orleans, La., the river rose slowly until the night of the 23d, when a stage of 17.9 feet, the highest stage on record at that point, was reached. The most important crevasse of the month occurred in the levee in front of the Rescue Plantation, above Ascension Parish, La., on the 23d. This crevasse widened rapidly, and large areas of land in that section were flooded. The break at the Rescue Plantation caused a gradual fall in the river below that point. At New Orleans the water fell one foot from the 24th to the close of the month.

ATMOSPHERIC PRESSURE (expressed in inches and hundredths).

The distribution of mean atmospheric pressure for June, 1893, as determined from observations taken daily at 8 a. m. and 8 p. m. (75th meridian time), is shown on Chart II by isobars.

Chart VI exhibits the normal distribution of atmospheric pressure and prevailing wind-directions over the United States for June. The publication of the charts of this series is preliminary to the publication by the Weather Bureau of specially prepared data and charts showing meteorological and climatic features and conditions of the United States.

In June, 1893, the mean pressure was highest along the Oregon and northern California coasts, where it was 30.10, and the mean readings were above 30.00 over the Atlantic coast states. The mean pressure was lowest over the west part of the southern plateau and in the region north of North Dakota, where it was below 29.75, and the mean values were below 29.80 over the greater part of the southern plateau region and generally over the Dakotas and eastern Montana.

A comparison of the pressure chart for June, 1893, with that of the preceding month shows a general increase of pressure in the Mississippi Valley and thence to the Atlantic coast, and over the north Pacific coast states. In the north-central districts and thence to the middle and south Pacific coasts the mean pressure was lower than for May, 1893. The greatest increase of pressure occurred over Pennsylvania, New York, and New England, where the mean readings were .10 to .14 higher than for the preceding month, and the most marked decrease in mean pressure was noted over the Dakotas and western Minnesota, where the mean values were 10 to .13 lower than for May, 1893.

The mean pressure was above the normal over the middle Atlantic and New England states, the eastern and southern lake regions, and the Ohio, middle Mississippi, and lower Missouri valleys. The mean pressure was also above the normal from the middle and north Pacific coasts over the northern plateau region. From Lake Superior to eastern Montana and thence over the Rocky Mountain and plateau regions to Texas and the south Pacific coast the mean pressure was below the normal. The mean readings were also below the normal over the Southeastern States. The greatest departure above the normal was reported over New Brunswick and Nova Scotia, where the mean pressure was .10 to .11 higher than the June normal, and the most marked departure below the normal pressure was noted from Lake Superior over the eastern Dakotas, and in areas from the middle Gulf states to the south Pacific coast, where the mean values were about .05 lower than usual.

HIGH AND LOW AREAS.

The paths of areas of high and low barometric pressure over the United States and Canada during June, 1893, are shown on Charts IV and I, respectively, and some of the more prominent characteristics of the high and low areas are given in the table at the end of this chapter.

HIGH AREAS.

Five high areas appeared, the average number traced for June during the last 19 years being 6. Of the high areas traced for the current month 3 appeared on the north Pacific coast, traversed the continent, and disappeared off the middle and south Atlantic coasts, one advanced from Manitoba over the Lake region, and passed thence over the Canadian Maritime Provinces, and one moved from the middle Rocky Mountain region to the south Atlantic coast. The average velocity of the high areas was about 2 miles per hour greater than usual. The following is a description of the high areas whose tracks are plotted on Chart IV:

I.—The month opened with this high area central off the

north Pacific coast, where it remained nearly stationary until the morning of the 3d. On that date the high area moved eastward over the northern Rocky Mountain region, with pressure above 30.20 at the morning report of the 4th. Moving southeastward over the Rocky Mountain districts, with pressure rising above 30.30, this high area was attended the morning of the 5th by temperature falling to 34° at Cheyenne, Wyo., and light frost in southeastern Wyoming and northern Colorado. The morning of the 6th the barometer was high from the Mississippi River to the middle and southern Rocky Mountain districts, a fall in temperature of 10° to 20° was shown over the northern lake region, and heavy frost was reported in southern Wyoming and northern Colorado. During the 6th the center advanced to western Missouri, and a marked fall in temperature occurred in the Atlantic coast states, the Ohio Valley, and the Lake region. Reports of the morning of the 7th show this high area central over the middle Mississippi valley, and a general fall in temperature in the Atlantic coast states, the Ohio Valley, and the eastern lake region. Moving eastward this high area passed off the south New England and New Jersey coasts during the 8th, with pressure rising above 30.30 over the middle Atlantic and south New England states at the morning report.

II.—Appeared over the Red River of the North Valley the morning of the 9th, with a fall in temperature of 10° to 20° over the Dakotas and Minnesota, and by the evening report of that date had advanced north of Lake Superior, with a fall in temperature of more than 20° over Upper Michigan. During the 10th this high area remained nearly stationary over the upper lake region, and the temperature fell 15° to 25° over the southern lake region. By the evening of the 11th the center had advanced to Lake Erie, and the temperature had fallen about 10° over the interior of the middle Atlantic and New England states. During the 12th this high area remained nearly stationary over Lake Erie, with pressure rising to 30.20 at the morning report. On that date the temperature fell about 10° along the immediate middle Atlantic and New England coasts. By the morning of the 13th the high area had moved rapidly eastward over the Canadian Maritime Provinces, with pressure rising above 30.20.

III.—Apparently developed on the eastern Rocky Mountain slope during the 16th, and at the evening report of that date the pressure was relatively high from extreme northwestern Texas to the Red River of the North Valley. During the 17th the high area moved over the western lake region, and during the 18th advanced over the southern lake region. By the evening of the 19th this high area had passed southeastward off the Carolina coast, with pressure rising above 30.20.

IV.—Moved southeastward from the north Pacific coast to Idaho during the 21st. On that date the temperature fell 20° from central Nebraska over southern Minnesota. During the 22d the high area advanced to the lower Missouri valley, and a marked fall in temperature occurred in the Atlantic coast states, the Lake region, and the Southwest. During the 23d this high area advanced over the Ohio Valley, and passing thence slowly southward disappeared off the south Atlantic coast during the 25th.

V.—Appeared off the California coast on the 22d, with pressure above 30.20 and a temperature fall of 10° to 20° over the north Pacific coast states. By the evening of the 23d this high area had moved northward off the Washington coast, and the temperature had fallen 10° to 20° from the middle plateau region to the British Northwest Territory north of eastern Montana and the Dakotas. During the 24th the high area advanced to the northern Rocky Mountain region, and the temperature fell about 10° on the middle-eastern slope of the Rocky Mountains. Moving east-southeast the center

reached Iowa by the evening of the 25th, and passed thence to the extreme upper Mississippi valley by the night of the 26th. During the 27th the high area remained nearly stationary over the Lake Superior region, and on the 28th moved slowly eastward north of the Lake region. By the morning of the 29th this high area had passed southeastward off the middle Atlantic coast, and at the close of the month the pressure was high along the Atlantic coast from Nova Scotia to Florida.

LOW AREAS.

The average velocity of low areas in June is about 25 statute miles per hour, the velocity for May, June, and July being the lowest noted for the year. The low areas of June generally appear over the plateau or Rocky Mountain regions, are usually ill-defined and of small energy, and the tracks are confined principally to districts lying west of the Mississippi and north of the Ohio rivers.

Ten low areas appeared during June, 1893, the average number traced for the corresponding month of the last 21 years being 9.2. Of the low areas traced for the current month, 4 first appeared north of Montana, 3 apparently developed over the middle or southern Rocky Mountain and plateau regions, one occupied the middle Mississippi valley at the opening of the month, one moved from the Gulf of Mexico northeastward along the Atlantic coast, and one passed eastward over the southern lake region and thence off the New England coast. One of the low areas from the British Northwest Territory reached the Gulf of Saint Lawrence, and one apparently dissipated over the Dakotas. One of the low areas from the Rocky Mountain region disappeared over the Gulf of Mexico, one moved northward over the Saskatchewan Valley, and one disappeared by an increase of pressure over the extreme upper Mississippi valley. The low area from the middle Mississippi valley reached the Gulf of Saint Lawrence. The average velocity of the low areas was about 2 miles per hour less than the average velocity of low areas traced for June of preceding years.

The following is a description of the low areas whose tracks are plotted on Chart I:

I.—Was a continuation of low area XI for May, 1893, and at the opening of the month occupied the middle Mississippi valley, with pressure below 29.60. The pressure was also low over the Dakotas and the southern Rocky Mountain region. The evening report of the 1st showed low pressure in the Southwest and a trough of low pressure extending from the upper Mississippi valley to the region north of Montana. On that date rain fell generally in the central valleys, the Lake region, and the Northwest, the rainfall being heavy in the south Atlantic and east Gulf states, and thunderstorms occurred in Virginia, North Carolina, the Ohio Valley and Tennessee, Lower Michigan, the Dakotas, and Nebraska. During the 2d this low area advanced to Lake Superior and thence to Manitoba, with pressure below 29.60, rain fell generally over the country east of the Rocky Mountains, except in New England, thunderstorms occurred in the middle and south Atlantic states, the lower lake region, the Ohio Valley and Tennessee, the Dakotas, and Nebraska, and local storms were reported in eastern Texas.

The storm-center remained nearly stationary over Manitoba during the 3d, rain fell in the Atlantic coast states, the Lake region, the Ohio, Mississippi, and Missouri valleys, and thunderstorms were reported in the Lake region, the Ohio Valley and Tennessee, and the upper Mississippi valley. By the evening of the 4th the center of disturbance had advanced to Upper Michigan, rain continued in the north-central and northeast districts, and thunderstorms occurred in the middle Atlantic states, the Ohio Valley and Tennessee, the Lake region, and the upper Mississippi valley. During the 5th

the storm-center advanced from Lake Superior to the region north of Lake Ontario, with rain from the middle and lower Mississippi river to the middle Atlantic coast, thunderstorms occurred in the middle Atlantic states and the lower lake region, and local windstorms were reported in Tennessee and Ohio. During the 6th this low area disappeared over the north part of the Gulf of Saint Lawrence. On that date the rain area contracted over the Atlantic coast states, and thunderstorms, with heavy rain, were reported from Maine to North Carolina.

II.—Advanced from the southern plateau region, and on the 3d was central near extreme northwestern Texas, with pressure falling below 29.60. During the 4th the center moved over Oklahoma, and thence to central Texas, with heavy rain in areas in the Southwest, and during the 5th disappeared over the Gulf of Mexico, attended by heavy rains in the middle Gulf states, in Tennessee, Kentucky, and Arkansas, and on the Texas coast.

III.—Appeared over extreme northern Alberta the morning of the 6th and moved slowly southward, with pressure below 29.50 at the evening report. During the 7th the center of disturbance moved southeastward over the middle Missouri valley, with severe windstorms in the middle Missouri valley, and thunderstorms in South Dakota. Passing thence northeastward over Minnesota during the 8th this low area was attended by thunder and wind storms from the Dakotas and Iowa over Minnesota and Upper Michigan. During the 9th this low area moved eastward north of the Lake region, its passage being generally unattended by precipitation. The night of the 9th thunderstorms were reported in the southwestern lake region and the extreme upper Mississippi valley and on the southeast New England coast. By the morning of the 10th the storm-center had advanced over the lower Saint Lawrence valley.

IV.—Apparently developed in the upper Mississippi valley during the 10th, and at the evening report was central near Sandusky, Ohio. On that date severe thunderstorms, with heavy rain, occurred in Lower Michigan, northern Illinois, northern Indiana, southern Wisconsin, and northeastern Iowa. During the 11th the center of disturbance passed eastward off the New England coast, with thunderstorms in New York and the lower lake region.

V.—Appeared over Alberta on the 8th and remained nearly stationary north of Montana during the 9th and 10th, with pressure falling below 29.30 at the evening report of the 10th. On the 9th thunderstorms were reported in South Dakota, Nebraska, Kansas, and Iowa. During the 10th the temperature rose 10° to 20° in the Northwest and no precipitation was reported in that region. By the night of the 11th this low area had advanced over the Dakotas and Manitoba, and southerly gales prevailed throughout the Missouri Valley. During the 12th the center of disturbance remained nearly stationary over the Dakotas, and severe thunderstorms were reported in the upper Mississippi valley. By the morning of the 13th the storm-center had apparently recurved westward and united with number VI.

VI.—Apparently developed over the middle plateau region during the 12th and the evening report of that date showed pressure 29.38 at Salt Lake City, Utah. During the 13th the center of disturbance passed to the region north of the Dakotas, with thunderstorms in the middle and upper Mississippi and Missouri valleys. During the 14th the low area disappeared by an increase of pressure over the Saskatchewan Valley.

VII.—Appeared over the middle Rocky Mountain region the morning of the 14th, and moved thence slowly eastward over South Dakota, Nebraska, and Kansas during that date, with severe thunder, rain, and hail storms from Illinois and Wisconsin to the Missouri Valley and middle Rocky Moun-

tain region. During the 15th this low area disappeared by an increase of pressure over the extreme upper Mississippi valley. On that date thunder and hail storms were reported in the Ohio, upper Mississippi, and Missouri valleys and the southern lake region.

VIII.—Appeared over the eastern part of the Gulf of Mexico the morning of the 15th, and by the evening report of that date had advanced to a position near Jacksonville, Fla., with gales and heavy rain along the south Atlantic coast. During the 16th the storm-center moved slowly northeastward along the south Atlantic coast, with pressure falling below 29.60. The rain area extended to the south New England states, heavy rain fell along the Carolina coast, and northeast gales prevailed along the middle Atlantic and south New England coasts. During the 17th this low area remained nearly stationary off the middle Atlantic coast, apparently decreasing in energy. Rain, followed by clearing weather, was reported in the middle Atlantic and New England states, and northeast gales continued along the middle Atlantic and south New England coasts. During the 18th this storm passed northeastward beyond the region of observation.

IX.—Moved southeastward over Montana the night of the 16th, and remained nearly stationary over southeastern Montana, with pressure below 29.60, during the 17th. During the 18th and 19th this low area remained nearly stationary over the Dakotas, with temperature 10° to 20° above the normal in the Missouri and upper Mississippi valleys. On the 19th severe thunderstorms were reported in the middle Mississippi valley. During the 20th the storm-center moved slowly eastward over the Dakotas, the temperature continued exceptionally high in the middle Missouri valley, Kansas, Nebraska, and eastern Colorado, and thunderstorms were reported in the middle Mississippi, lower Ohio, and lower Missouri valleys, and the southwestern lake region.

The morning of the 21st a trough of low pressure extended from Minnesota and Manitoba to northwestern Texas, with two cyclonic centers, one over southern Minnesota and the other near Dodge City, Kans. By the evening report of the 21st this trough of low pressure had moved eastward, and

two centers of disturbance appeared, one over northern Lake Michigan and the other over southeastern Kansas. On that date thunderstorms were reported from the lower Missouri valley to the middle Atlantic coast, and severe local storms occurred in Iowa, Missouri, and eastern Kansas.

During the 22d the storm-center advanced eastward north of the lower lakes, with pressure below 29.50, a secondary storm appeared over New Jersey, and thunderstorms, with heavy rain, occurred over the middle and south Atlantic and south New England states, and the middle and upper Ohio valleys. During the 23d this low area apparently disappeared by an increase of pressure over the Saint Lawrence Valley. Low area IXb, which appeared over New Jersey, apparently passed southeastward south of Nova Scotia, and heavy rain and high northeast winds prevailed along the New England coast.

X.—Appeared over the northern plateau region and moved thence over Alberta by the evening of the 22d. During the 23d this low area advanced to Manitoba with pressure below 29.40, and the evening of that date a secondary development appeared over southwestern Kansas; severe gales prevailed over the Western and Northwestern States, and destructive thunder and hail storms were reported in Kansas and western Iowa. During the 24th the center of disturbance advanced to Lake Superior with a marked decrease in energy, and low area IXa disappeared by an increase of pressure over Kansas and Missouri. During the day and night of the 25th this low area moved eastward north of the Lake region, attended by thunderstorms in the Ohio Valley and Tennessee, and the lower lake region. The morning of the 26th a trough of low pressure extended from eastern Ontario over the middle Atlantic coast, with two cyclonic centers, one near the mouth of Chesapeake Bay and the other near Rockliffe, Ont. During the 26th heavy rain fell on the middle Atlantic coast, and thunderstorms were reported in the middle Atlantic states and the lower lake region. During the 27th this trough of low pressure moved eastward off the coast.

From the 25th to the close of the month, short-lived low areas, not traced, caused severe thunderstorms at points in the Western States and the central valleys.

Tabulated statement showing principal characteristics of areas of high and low pressure.

Barometer.	First observed.			Last observed.			Duration.	Velocity per hour.	Maximum pressure change in 12 hours, maximum abnormal temperature change in 12 hours, and maximum wind velocity.											
	Date.	Lat. N.	Long. W.	Lat. N.	Long. W.				Station.	Rise.	Date.	Station.	Fall.	Date.	Station.	Direction.	Miles per hour.	Date.		
High areas.							Days.	Miles.												
I.....	3	48	124	41	75	5-0	22		Pueblo, Colo.....	Isch.	4	Oswego, N. Y.....	18	6	Pueblo, Colo.....	n.	36	4		
II.....	9	49	95	44	65	4-0	21		Winnipeg, Man.....	34	9	Parry Sound, Ont.....	26	10	Sandy Hook, N. J.....	e.	26	13		
III.....	16	42	100	41	82	2-5	17		Rockliffe, Ont.....	59	18	Prince Arthur, Ont.....	12	17	Titusville, Fla.....	ne.	38	19		
IV.....	21	46	125	33	82	4-0	31		Wichita, Kans.....	42	22	Dodge City, Kans.....	18	22	Amarillo, Tex.....	s.	24	22		
V.....	23	47	125	47	80	5-0	23		Salt Lake City, Utah.....	36	23	Qu'Appelle, N. W. T.....	22	23	Chicago, Ill.....	ne.	20	27		
Mean.....						4-1	23			37			20					29		
Low areas.																				
I.....	1	39	91	49	72	5-0	23		White River, Ont.....	Fall.	2	Green Bay, Wis.....	Rise.	3	Chicago, Ill.....	ne.	48	1		
II.....	3	37	103	26	97	2-0	20		Pueblo, Colo.....	26	2	Pueblo, Colo.....	13	2	Dodge City, Kans.....	se.	40	3		
III.....	6	53	114	51	66	4-0	29		Medicine Hat, N. W. T.....	48	6	Havre, Mont.....	24	6	Fort Canby, Wash.....	s.	51	6		
IV.....	10	42	83	43	71	1-0	27		Sandusky, Ohio.....	16	10	Raleigh, N. C.....	7	10	Buffalo, N. Y.....	sw.	56	11		
V.....	8	53	115	45	100	4-0	13		Prince Albert, N. W. T.....	42	10	Rapid City, S. Dak.....	22	11	Moorhead, Minn.....	se.	38	11		
VI.....	12	40	113	52	103	1-0	36		Qu'Appelle, N. W. T.....	44	13	Denver, Colo.....	13	12	Huron, S. Dak.....	se.	44	13		
VII.....	14	41	103	44	95	1-0	23		Kansas City, Mo.....	16	14	New York, N. Y.....	13	14	Amarillo, Tex.....	s.	56	14		
VIII.....	15	38	86	41	68	3-0	20		Savannah, Ga.....	24	15	Duluth, Minn.....	16	15	Southport, N. C.....	s.	55	16		
IX.....	17	46	106	47	75	8-0	12		Prince Albert, N. W. T.....	30	17	Miles City, Mont.....	32	18	Fort Hill, S. C.....	w.	60	22		
X.....	22	53	114	46	77	3-5	24		Lander, Wyo.....	42	22		20	22	Fort Buford, N. Dak.....	w.	56	23		
Mean.....						3-0	23			31			16					50		

* Pikes Peak, Colo., sw., 86, 13th.

NORTH ATLANTIC STORMS FOR JUNE, 1893.

[Pressure in inches and millimeters; wind-force by Beaufort scale.]

The paths of storms that appeared over the west part of the north Atlantic Ocean during June, 1893, are shown on Chart I. These paths have been determined from reports of observations by shipmasters received through the co-operation of the Hydrographic Office, Navy Department, and the "New York Herald Weather Service."

The north Atlantic pressure for June is highest in an area extending from the Azores southwestward to the 50th meridian, where it is above 30.20 (767); it is lowest from southern Greenland over Iceland, where it is below 29.80 (757).

In June there is usually an increase of pressure over southern and eastern portions of the ocean, and a decrease from the region south of Newfoundland and Nova Scotia to Greenland and Iceland. The greatest increase of pressure occurs from the Azores and Madeira islands to the Spanish Peninsula, where the mean values are .05 inch, or more, higher, and the most marked decrease is shown from Newfoundland to Greenland and Iceland, where the normal pressure is .05 inch, or more, lower than for the preceding month.

The principal track of June storms is traced from Newfoundland east-northeast to the 20th meridian, where the track divides, one part passing over Scotland and the other southeastward over France. A less frequented track is traced from Labrador to Iceland and thence over Scandinavia. The average velocity of north Atlantic storms for June is 16 statute miles per hour, the velocity for May and June being the lowest noted for the year. In June an average of one storm per month traverses the north Atlantic Ocean from the American to the European coasts.

June, 1893, was not marked by storms of exceptional severity over the north Atlantic Ocean. The most important storm of the month, and the only storm traced across the ocean from the American to the European coasts, was low area VIII, which appeared over the east part of the Gulf of Mexico the morning of the 15th. From the 15th to the 18th this storm moved slowly northeastward along and off the south and middle Atlantic coasts, attended by heavy rain and moderate gales from the south New England coast to the Florida Peninsula. By the morning of the 19th the storm-center had advanced to a position south of Newfoundland, with central pressure about 29.50 (749), and gales of force 10 over the Grand Banks. During the 20th and 21st the center of disturbance remained nearly stationary southeast of Newfoundland, with pressure 29.20 (742) to 29.30 (744), and gales of force 9 to 11. From the 22d to the 24th the storm occupied the region east of Newfoundland without an apparent decrease in energy. Reports of the 25th show a movement southeastward towards the Azores. By the 26th the storm had advanced to a position north of the Azores, with pressure about 29.30 (744), and gales of force 7 to 9, after which it passed rapidly northeastward and disappeared north of the British Isles during the 27th.

The month opened with a storm of moderate energy central over mid-ocean in high latitudes. During the 3d this storm apparently passed eastward north of the British Isles. On the 3d a storm of considerable strength appeared near the 40th meridian, with pressure about 29.40 (747) and gales of force 9 to 11. By the 4th this storm had apparently increased in energy, and the pressure continued low over mid-ocean until the 8th, when low area I advanced rapidly eastward from the northern part of the Gulf of Saint Lawrence. From the 8th to the 13th the pressure continued generally high and fair weather prevailed over mid-ocean. On the 12th a disturbance appeared west of the Bay of Biscay, where it remained nearly stationary, without evidence of marked energy, during

the 13th. By the 14th the center of disturbance had apparently advanced towards the British Isles. Reports of the 15th indicate that this storm passed northwestward and united with a storm which appeared northeast of the Banks of Newfoundland on the 13th and moved thence eastward over mid-ocean. This area of low pressure remained nearly stationary over mid-ocean until the 19th when it was joined by low area VIII. On the 23d low area IXa was central off the southeast New England coast, from which position it moved slowly eastward as a storm of moderate strength and reached the 60th meridian the morning of the 26th, crossed the Grand Banks during the 27th, and occupied mid-ocean from the 28th to the close of the month. A storm apparently occupied the British Isles during the 23d and 24th, after which it disappeared to the eastward.

OCEAN ICE IN JUNE.

The following table shows the southern and eastern limits of the region within which icebergs or field ice were reported for June during the last 11 years:

Southern limit.			Eastern limit.		
Month.	Lat. N.	Long. W.	Month.	Lat. N.	Long. W.
June, 1883.....	40 28	51 45	June, 1883.....	48 14	42 43
June, 1884.....	41 42	47 49	June, 1884.....	44 00	45 23
June, 1885.....	39 38	48 12	June, 1885.....	45 14	41 12
June, 1886.....	40 30	53 00	June, 1886.....	49 15	40 00
June, 1887.....	40 40	48 34	June, 1887.....	43 22	39 19
June, 1888.....	43 38	43 24	June, 1888.....	43 38	43 24
June, 1889.....	42 54	49 54	June, 1889.....	46 57	40 29
June, 1890.....	40 01	52 00	June, 1890.....	46 08	37 07
June, 1891.....	40 15	50 24	June, 1891.....	44 15	43 47
June, 1892.....	41 44	50 40	June, 1892.....	45 50	40 46
June, 1893.....	42 08	53 19	June, 1893.....	47 20	44 19
Mean.....	41 09	49 55	Mean.....	45 50	41 41

* On the 10th a small block of ice was reported in N. 46° 28', W. 26° 34'.

The limits of the region within which icebergs or field ice were reported for June, 1893, are shown on Chart I by ruled shading. The southernmost ice reported, 2 pieces of ice observed on the 9th in the position given, was about 1° north, and the easternmost ice reported, a large iceberg noted on the 23d in the position given in the table, was about 2½° west of the average eastern limit of ice for the month. Ice was encountered in great quantities on the northern edge of the Banks of Newfoundland, and many icebergs were reported along the east Newfoundland coast. On the 28th and 29th large bergs were reported in and to the eastward of the Straits of Belle Isle.

OCEAN FOG IN JUNE.

June is one of the months of greatest fog frequency near the Banks of Newfoundland. In June, 1893, there was an unusual prevalence of fog west of the 40th meridian.

The limits of fog belts west of the 40th meridian, as reported by shipmasters, are shown on Chart I by dotted shading. Near the Banks of Newfoundland fog was reported on 24 dates; between the 55th and 65th meridians on 16 dates; and west of the 65th meridian on 17 dates. Compared with the corresponding month of the last 5 years the dates of occurrence of fog near the Grand Banks numbered 8 more than the average; between the 55th and 65th meridians 3 more than the average; and west of the 65th meridian 2 more than the average. The fog noted by shipmasters and that reported by observers of the Weather Bureau on the middle Atlantic and New England coasts generally attended the approach or passage of general storms.

TEMPERATURE OF THE AIR (expressed in degrees Fahrenheit).

The distribution of mean temperature over the United States and Canada for June, 1893, is exhibited on Chart II by dotted isotherms. In the table of miscellaneous meteorological data the monthly mean temperature and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for mean temperature and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the temperature is below the normal and subtracting when above. The monthly mean temperature for regular stations of the Weather Bureau represents the mean of the maximum and minimum temperatures.

The highest mean temperature for June, 1893, was reported in the Colorado Desert, California, where it was above 100, and the mean values were above 90 in the Gila and lower Colorado valleys. Over the greater part of the Florida Peninsula, along the immediate Gulf coast, generally over Texas, and in extreme southern New Mexico the mean readings were above 80. The mean temperature was above 70 in the Atlantic coast states south of New Jersey, in the central valleys to central Minnesota and North Dakota, and in the central valleys of California. The lowest mean temperature for June, 1893, was noted in the mountains of Colorado, where it fell below 50, and the mean readings were below 60 on the extreme southeast and east New England coasts, on the north shore of Lake Superior, in the middle and northern Rocky Mountain regions, over the northern plateau, Washington, and Oregon, and along the immediate Pacific coast to about the 37th parallel.

DEPARTURES FROM NORMAL TEMPERATURE.

The following table shows for certain stations, as reported by voluntary observers, (1) the normal temperature for June for a series of years; (2) the length of record during which the observations have been taken, and from which the normal has been computed; (3) the mean temperature for June, 1893; (4) the departure of the current month from the normal; (5) and the extreme monthly mean for June during the period of observation and the years of occurrence:

State and station.	(1) Normal for the month of June.	(2) Length of record.	(3) Mean for June, 1893.	(4) Departure from normal.	(5) Extreme monthly mean for June.			
					Highest.	Year.	Lowest.	Year.
<i>Arizona.</i>	°	Years	°	°	°		°	
Fort Apache	71.5	21	71.4	- 0.1	78.0	1876	63.6	1884
Fort Mohave	88.8	22	87.8	- 1.0	95.3	1876	83.4	1890
Whipple Barracks	69.6	22	65.0	- 4.6	78.9	1876	62.8	1884
<i>Arkansas.</i>								
Keesees Ferry	77.2	11	73.8	- 3.4	80.2	1885	73.8	1893
<i>California.</i>								
Fort Bidwell	63.3	21	58.7	- 4.6	70.6	1871	55.4	1891
Riverside	71.0	11	70.8	- 0.2	78.1	1883	67.1	1890
<i>Colorado.</i>								
Las Animas	69.7	10	72.0	+ 2.3	72.5	1887	68.1	1884
<i>Florida.</i>								
Merritt Island	78.5	11	81.0	+ 2.5	83.4	1890	73.8	1892
<i>Georgia.</i>								
Forsyth	76.9	19	77.6	+ 0.7	81.9	1880, 1881	74.2	1884
<i>Idaho.</i>								
Boise Barracks	66.5	19	62.7	- 3.8	74.3	1871	60.0	1891
Fort Sherman	61.2	10	55.0	- 6.2	64.4	1882	55.0	1893
<i>Indiana.</i>								
Lafayette	70.5	11	71.6	+ 1.1	75.7	1890	66.2	1889
<i>Indian Territory.</i>								
Fort Supply	75.4	13	80.7	+ 5.3	80.7	1893	72.6	1891
<i>Iowa.</i>								
Cresco	66.0	20	68.2	+ 2.2	72.0	1873	62.8	1877
<i>Kansas.</i>								
Eureka Ranch	75.4	10	76.5	+ 1.1	80.0	1890	70.8	1892
Independence	74.8	21	73.9	- 0.9	79.0	1872	70.8	1889
Salina	75.3	10	.....	.....	79.3	1890	71.2	1891
<i>Louisiana.</i>								
Grand Coteau	79.6	10	79.4	- 0.2	82.0	1891	78.0	1892

Departures from normal temperature—Continued.

State and station.	(1) Normal for the month of June.	(2) Length of record.	(3) Mean for June, 1893.	(4) Departure from normal.	(5) Extreme monthly mean for June.			
					Highest.	Year.	Lowest.	Year.
<i>Maine.</i>	°	Years	°	°	°		°	
Orono	62.1	23	.....	.....	64.8	1884, 1889	57.5	1881
<i>Maryland.</i>								
Cumberland	68.8	22	70.9	+ 2.1	74.0	1874	65.3	1878
<i>Michigan.</i>								
Kalamazoo	67.4	16	70.6	+ 3.2	70.6	1893	63.7	1889
<i>Missouri.</i>								
Sedalia	74.3	11	74.6	+ 0.3	80.5	1890	71.6	1891
<i>Montana.</i>								
Fort Custer	63.8	11	63.8	0.0	66.5	1884	60.8	1891
<i>Nebraska.</i>								
Fort Robinson	66.8	8	69.2	+ 2.4	71.7	1887	62.5	1891
Genoa (near)	69.4	17	72.3	+ 2.9	72.8	1890	66.4	1878
<i>Nevada.</i>								
Browns	75.6	22	79.6	+ 4.0	83.7	1873	69.0	1882
Carson City	64.6	15	58.7	- 5.9	69.9	1870	58.7	1893
<i>New Hampshire.</i>								
Hanover	64.2	22	66.4	+ 2.2	68.8	1876	61.5	1881
<i>New Mexico.</i>								
Fort Wingate	69.6	22	.....	.....	75.2	1881	63.6	1891
<i>New York.</i>								
Cooperstown	64.1	22	66.0	+ 1.9	70.0	1876	59.0	1881
Plattsburg Barracks	64.8	22	66.3	+ 1.5	68.8	1872	60.8	1881
<i>North Carolina.</i>								
Lenoir	70.5	21	70.5	0.0	75.0	1874	63.6	1887
<i>Oklahoma.</i>								
Fort Reno	75.0	9	76.4	+ 1.4	76.9	1890	72.5	1889
Fort Sill	77.8	21	78.8	+ 1.0	83.2	1881	73.8	1889
<i>Oregon.</i>								
Bandon	56.4	9	56.0	- 0.4	59.8	1891	54.1	1887
<i>Pennsylvania.</i>								
Dyberry	64.2	20	66.0	+ 1.8	66.8	1884	60.4	1881
Grampian	66.7	22	69.0	+ 2.3	71.7	1892	61.3	1878
Wellaboro	65.6	14	63.8	- 1.8	74.6	1883	61.1	1881
<i>South Carolina.</i>								
Statesburg	76.3	12	74.6	- 1.7	80.5	1881	72.4	1884
<i>South Dakota.</i>								
Fort Sully	68.9	22	73.9	+ 5.0	76.1	1871	63.6	1877
<i>Texas.</i>								
Austin	83.2	20	78.2	- 5.0	85.9	1881	78.2	1893
Silver Falls	76.1	6	79.5	+ 3.4	79.5	1893	71.8	1889
<i>Utah.</i>								
Terrace	73.1	21	70.7	- 2.4	79.3	1878	60.8	1885
<i>Vermont.</i>								
Stratford	65.7	20	66.2	+ 0.5	71.1	1884	58.4	1881
<i>Virginia.</i>								
Dale Enterprise	72.5	13	72.7	+ 0.2	78.5	1890	68.2	1882
<i>Washington.</i>								
Fort Townsend	58.6	20	52.6	- 6.0	61.7	1888	52.6	1893
<i>West Virginia.</i>								
Parkersburg .....	.....	.....	.....	.....	.....	.....	.....	.....
<i>Wisconsin.</i>								
Embarrass	67.9	22	.....	.....	73.2	1873	63.2	1889
Madison	67.2	20	69.8	+ 2.6	72.4	1873	63.5	1889
<i>Wyoming.</i>								
Fort Washakie	62.4	9	51.1	- 1.3	68.9	1887	58.5	1892

The month was warmer than usual in the middle Atlantic and New England states, and thence over the Lake region, the Ohio, upper Mississippi, middle Missouri, and Red River of the North valleys to the middle Rocky Mountain region, and thence to the southern boundary of the United States from eastern Texas to southwestern California. In the south Atlantic and middle and east Gulf states, and from the Pacific coast over the middle and northern plateau and the northern Rocky Mountain regions the month was cooler than usual. The greatest departure above the normal temperature was noted over the eastern and northern lake regions, in the extreme upper Mississippi valley, in the valley of the Red River of the North, and at Fort Stanton, N. Mex., where the mean was 4, or more, higher than the June average. The most marked departure below the normal temperature was reported in the valley of the Columbia River, where the mean readings were 5, or more, lower than usual. Elsewhere the departures from the normal temperature were less than 2.

TEMPERATURE, JANUARY TO JUNE, 1893.

For the period January 1 to June 30, 1893, the mean temperature averaged about 4 below the normal over the northern plateau region, averaged 2 to 3 below the normal in the upper Mississippi valley, over the middle plateau region, and

on the middle and north Pacific coasts, and was 1 to 2 below the normal in the New England, middle, south Atlantic, and east Gulf states, the Ohio Valley and Tennessee, the Lake region, the Missouri Valley, on the northeast and middle-eastern slopes of the Rocky Mountains, and on the south Pacific coast. On the southeast slope of the Rocky Mountains the mean temperature was about 2 above the normal, and in the extreme northwest it was about 1 above the normal. In the west Gulf states and over the southern plateau region the mean temperature averaged about normal for the period named.

YEARS OF HIGHEST MEAN TEMPERATURE FOR JUNE.

At Northfield, Vt., Rochester, N. Y., Alpena, Marquette, and Kalamazoo, Mich., Abilene and Silver Falls, Tex., Fort Supply, Ind. T., Fort Stanton, N. Mex., Valentine, Nebr., Huron and Rapid City, S. Dak., the mean temperature for the current month was the highest reported for June during the respective periods of observation. The highest mean temperature for June was reported at points on the immediate New England and New York coasts in 1892; in the Carolinas, northern Georgia, and eastern Tennessee, and from Lower Michigan to the lower Ohio valley in 1890; from the Oregon coast over the northern plateau and the north part of the middle plateau in 1889; on the south Pacific coast in 1883; from the middle-eastern slope of the Rocky Mountains over the south part of the Gulf States in 1881; in New York and Pennsylvania in 1886; and from Virginia and Maryland over Kentucky and central Tennessee in 1874.

YEARS OF LOWEST MEAN TEMPERATURE FOR JUNE.

At Portland, Me., Nantucket, Mass., Helena, Mont., Fort Sherman, Idaho, Carson City, Nev., Walla Walla, Spokane, Olympia, Fort Canby, and Fort Townsend, Wash., Portland, Roseburg, and Astoria, Oregon, the mean temperature for the current month was the lowest reported during the respective periods of observation. The lowest mean temperature for June was reported from Michigan and Wisconsin to east Texas in 1889; in the south Atlantic and east Gulf states and in the Sacramento Valley, California, in 1884; and from the lower lake region to the New Jersey and south New England coasts in 1881.

MAXIMUM TEMPERATURE.

At Nantucket, Mass., New London, Conn., Philadelphia, Pa., Moorhead and Saint Vincent, Minn., Valentine, Nebr., and Dodge City and Wichita, Kans., the maximum temperature for the current month was higher than previously reported for June.

The highest temperature reported for the current month by a regular station of the Weather Bureau was 111 at Yuma, Ariz., on the 7th. The temperature rose above 100 in the San Joaquin Valley, California, on the 4th, and in the Sacramento Valley, California, on the 30th. 100 and above was reached generally in Kansas, Oklahoma, and western Texas from the 21st to the 24th, and in South Dakota and adjoining parts of Minnesota and North Dakota on the 11th and 12th. The highest temperature of the month was noted generally in the Ohio Valley on the 19th, when the maximum values varied

from 91 to 94, and in the middle Atlantic and New England states on the 20th, when the temperature rose to 98 at Philadelphia, Pa., and Baltimore, Md. The lowest maximum temperature, 69, was reported at Eureka, Cal.; the maximum readings were below 80 on the extreme north Pacific coast and at San Diego, Cal., and the maximum values were below 90 over extreme northern New England, on the southeast New England coast, generally in the Lake region, over the middle and northern plateau and northern Rocky Mountain regions, and in the north Pacific coast states.

MINIMUM TEMPERATURE.

At Montrose, Colo., and Roseburg, Oregon, the minimum temperature for the current month was the lowest ever reported for June.

The lowest temperature reported by regular stations of the Weather Bureau was 32, at Lander, Wyo., on the 3d, and at Cheyenne, Wyo., on the 6th. Minimum temperature below 40 was noted in Upper Michigan, over the middle and northern Rocky Mountain and middle and northern plateau regions, and in the north Pacific coast states, except in the valley of the Columbia River. The highest minimum temperature, 71, was noted at Key West, Fla., and the minimum readings were above 60 along the south Atlantic coast and over the southern portions of the Gulf States and Texas.

RANGES OF TEMPERATURE.

The greatest daily range of temperature is shown in the table of miscellaneous meteorological data. The greatest monthly range of temperature, 61, was noted at Rapid City, S. Dak. From the Dakotas the monthly ranges decreased eastward to less than 40 on the south New England and middle Atlantic coasts, to less than 30 along the immediate south Atlantic coast and over the Florida Peninsula, to 18 at Key West, Fla., and to 20 at Galveston, Tex. The monthly ranges decreased westward to less than 30 at points on the immediate middle and north Pacific coasts, and to 22 at San Diego, Cal.

FROST.

Light frost was reported in northern New Hampshire and northern Vermont on the 8th, in Maine on the 17th, and at Taunton, Mass., on the 29th. Light frost was reported in central Ohio on the 7th and 8th, and in the interior and north portions of Lower Michigan on the 7th. Heavy frost on the 6th caused some damage about Cheyenne, Wyo. On the 10th and 18th heavy frost caused considerable damage about Jolon, Cal. Garden vegetation was damaged by frost about Snowville, Utah, on the 14th. Heavy frost killed tender vegetation at Show Low, Ariz., on the 16th. Light frost was noted at Roseburg, Oregon, the morning of the 19th. The observer reports that this was the latest frost ever noted at that station, and that the minimum temperature was the lowest on record for Roseburg for June. At Meadow Valley, Cal., garden vegetables were destroyed by heavy frost on the 19th. On the 22d tender vegetation about Lander, Wyo., was injured by frost. At Vernonia, Oregon, the temperature fell to 34 on the 29th, and heavy frost injured garden vegetables.

PRECIPITATION (expressed in inches and hundredths).

The distribution of precipitation over the United States and Canada for June, 1893, as determined from reports of more than 2,000 stations, is exhibited on Chart III. In the table of miscellaneous meteorological data the total precipitation and the departure from the normal are given for regular stations of the Weather Bureau. The figures opposite the names of the geographical districts in the columns for

precipitation and departure from the normal show, respectively, the averages for the several districts. The normal for any district may be found by adding the departure to the current mean when the precipitation is below the normal and subtracting when above.

In June the monthly precipitation is usually greatest over central and eastern portions of the Florida Peninsula, where

it exceeds 8.00. Along the south Atlantic and middle Gulf coasts, and in areas in Illinois and Iowa the monthly amount generally exceeds 6.00. Over the greater part of the country from the eastern Rocky Mountain slope to the Atlantic coast south of the 40th parallel the normal precipitation for June is 4.00 to 6.00. Along the immediate north Pacific coast and in areas in the lower valley of the Columbia River the monthly amount is usually 2.00 to 4.00. Over the plateau region and in California south of the 40th parallel the normal precipitation for June is generally less than 1.00.

In June, 1893, the monthly precipitation was greatest in north-central and west-central portions of the Florida Peninsula and in areas along the south Atlantic coast, Arkansas, and Louisiana, where it exceeded 10.00. The monthly amount was in excess of 8.00 over eastern portions of the south Atlantic states, over the greater part of the Florida Peninsula, in southeastern Virginia, in an area extending from south-central Arkansas over western Louisiana and extreme eastern Texas, and at stations in eastern Kansas. Along the immediate north Pacific coast 4.00 to 7.00 fell. In Arizona, southern Nevada, southern Utah, and over interior and eastern parts of California no precipitation was reported. In the Rocky Mountain and middle and northern plateau regions, and in extreme northern and western California less than 1.00 was reported.

DEPARTURE FROM NORMAL PRECIPITATION.

More than the usual amount of precipitation was reported in Ontario and the valley of the Red River of the North, in the south Atlantic states, southern Virginia, Kentucky, central and eastern Tennessee, in an area extending from Nebraska to the west Gulf coast, and along the Pacific coast north of the mouth of the Columbia River. The greatest excess in precipitation, 11.20, was noted at Charleston, S. C. At Norfolk, Va., the monthly rainfall exceeded the normal amount for June by 4.1, and the excess was greater than 3.00 at Shreveport, La., Cairo, Ill., and Tatoosh Island, Wash. Less than the usual amount of rain fell generally in the Canadian Maritime Provinces, the middle Atlantic and New England states, along the Florida and middle and east Gulf coasts, in the Lake region, middle and upper Ohio, upper Mississippi, and upper Missouri valleys, and over the Rocky Mountain and plateau and middle and south Pacific coast regions. The most marked deficiency in monthly precipitation was reported in eastern New Brunswick, at southern Lake Erie stations, and at Springfield, Ill., Duluth, Minn., and Huron, S. Dak., where the amount was 3.00, or more, less than usual. The deficiency was 2.00, or more, at Kittyhawk, N. C., Pensacola, Fla., Memphis, Tenn., and at stations in the lower lake region, the Ohio, upper Mississippi, and upper Missouri valleys, and southwestern Texas.

Considered by districts the average percentage of the normal in districts where the monthly precipitation was in excess was about as follows: north Pacific coast, 136; south Atlantic states, 132; west Gulf states, 124; extreme northwest, 112. In districts where the monthly precipitation was deficient the percentage of the normal was about as follows: middle Pacific coast, 13; northern plateau region, 25; southeast slope of the Rocky Mountains, 31; lower lake region and northeast slope of the Rocky Mountains, 61; Key West, Fla., 66; upper lake region, 74; New England, 75; upper Mississippi valley, 76; middle-eastern slope of the Rocky Mountains, 83; Missouri Valley, 87, and east Gulf states, 88. In the middle Atlantic states, the Ohio Valley and Tennessee, over the middle plateau region, and along the south Pacific coast the monthly precipitation averaged about normal.

The following table shows for certain stations, as reported by voluntary observers, (1) the average precipitation for June for a series of years; (2) the length of record during

which the observations have been taken and from which the average has been computed; (3) the total precipitation for June, 1893; (4) the departure of the current month from the average; (5) and the extremes for June during the period of observation and the years of occurrence:

State and station.	(1) Average for the month of June.	(2) Length of record.	(3) Total for June, 1893.	(4) Departure from average.	(5) Extremes for June.			
					Greatest.		Least.	
					Am't.	Year.	Am't.	Year.
<i>Arizona.</i>	<i>Inches.</i>	<i>Years.</i>	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>		<i>Inches.</i>	
Fort Apache	0.64	17	0.00	- 0.64	3.27	1882	0.00	†
Fort Mohave	0.05	22	0.00	- 0.05	1.00	1872	0.00	*
Whipple Barracks	0.16	22	0.00	- 0.16	1.24	1872	0.00	†
<i>Arkansas.</i>								
Keesees Ferry	4.89	11	5.60	+ 0.71	7.14	1882	2.18	1890
<i>California.</i>								
Fort Bidwell	1.09	22	0.01	- 1.08	4.29	1884	T.	1883
Riverside	0.07	12	0.00	- 0.07	0.52	1884	0.00	*
<i>Colorado.</i>								
Las Animas	1.67	10	1.84	+ 0.17	2.79	1884	0.05	1890
<i>Florida.</i>								
Merritts Island	7.38	15	7.67	+ 0.29	14.28	1889	3.32	1878
<i>Georgia.</i>								
Forsyth	4.72	19	6.79	+ 2.07	11.14	1886	1.48	1879
<i>Idaho.</i>								
Boise Barracks	0.96	19	T.	- 0.96	3.41	1884	T.	1893
Fort Sherman	1.39	9	0.75	- 0.64	2.11	1885	0.16	1882
<i>Indiana.</i>								
Lafayette	4.39	11	1.93	- 2.46	9.10	1882	1.93	1893
<i>Indian Territory.</i>								
Fort Supply	2.91	13	0.74	- 2.17	5.44	1885	0.40	1874
<i>Iowa.</i>								
Cresco	5.43	20	4.14	- 1.29	11.71	1890	2.46	1887
<i>Kansas.</i>								
Independence	5.19	21	3.93	- 1.26	11.26	1881	2.05	1875
Salina	3.67	10	.....	.....	6.11	1883	0.92	1892
<i>Louisiana.</i>								
Grand Coteau	6.33	10	7.40	+ 1.07	11.31	1886	2.50	1884
<i>Maine.</i>								
Orono	3.51	23	.....	.....	5.96	1892	0.73	1880
<i>Maryland.</i>								
Cumberland	3.90	21	2.12	- 1.78	10.08	1892	0.86	1885
<i>Michigan.</i>								
Kalamazoo	4.89	17	2.94	- 2.04	8.10	1883	1.78	1878
<i>Missouri.</i>								
Sedalia	5.58	14	3.40	- 2.18	9.24	1891	1.11	1890
<i>Montana.</i>								
Fort Custer	2.82	12	1.62	- 1.20	5.02	1891	0.90	1889
<i>Nebraska.</i>								
Fort Robinson	3.11	9	1.95	- 1.16	11.91	1892	0.60	1890
Genoa (near)	4.30	17	3.23	- 1.07	8.48	1891	1.50	1892
<i>Nevada.</i>								
Brown	0.24	22	0.00	- 0.24	1.13	1878	0.00	†
Carson City	0.44	15	0.00	- 0.44	1.97	1884	0.00	1893
<i>New Hampshire.</i>								
Hanover	3.64	21	4.72	+ 1.08	7.42	1892	1.74	1873
<i>New Mexico.</i>								
Fort Wingate	0.64	21	T.	- 0.64	3.15	1873	0.00	†
<i>New York.</i>								
Cooperstown	4.24	22	2.20	- 2.04	7.31	1872	1.94	1873
Plattsburg Barracks	3.01	22	2.42	- 0.59	7.62	1892	1.27	1881
<i>North Carolina.</i>								
Lenoir	4.31	21	3.50	- 0.81	10.30	1884	0.90	1881
<i>Oklahoma.</i>								
Fort Reno	4.67	10	3.25	- 1.42	10.33	1885	0.28	1888
Fort Sill	3.86	21	0.51	- 3.35	8.16	1885	0.21	1881
<i>Oregon.</i>								
Bandon	1.72	15	2.29	+ 0.57	6.11	1881	0.12	1883
<i>Pennsylvania.</i>								
Dyberry	2.93	22	3.06	+ 0.13	6.07	1892	1.13	1873
Grampian	4.51	15	2.25	- 2.26	9.85	1884	2.25	1893
Wellsboro	6.97	14	1.42	- 5.55	17.47	1881	1.42	1893
<i>South Carolina.</i>								
Statesburg	3.64	12	7.27	+ 3.63	7.27	1893	1.38	1881
<i>South Dakota.</i>								
Fort Sully	3.33	22	2.80	- 0.53	6.41	1890	1.50	1871
<i>Texas.</i>								
Austin	3.18	20	1.85	- 1.33	8.32	1872	0.00	1881
Silver Falls	2.44	6	1.39	- 1.05	3.84	1890	0.98	1887
<i>Utah.</i>								
Terrace	0.23	20	0.00	- 0.23	1.23	1886	0.00	†
<i>Vermont.</i>								
Stratford	3.61	20	2.05	- 1.56	7.86	1892	1.60	1884, 1885
<i>Virginia.</i>								
Dale Enterprise	5.63	13	3.23	- 2.40	11.00	1884	1.73	1882
<i>Washington.</i>								
Fort Townsend	1.46	18	1.31	- 0.15	4.10	1875	0.24	1886
<i>West Virginia.</i>								
Parkersburg	3.68	8	.....	.....	4.84	1890	1.30	1885
<i>Wisconsin.</i>								
Embarras	5.70	22	.....	.....	11.40	1880	1.75	1874
Madison	4.49	20	6.69	+ 2.20	9.31	1880	1.06	1886
<i>Wyoming.</i>								
Fort Washakie	1.08	9	0.62	- 0.46	3.98	1889	T.	1881

*Generally.

†Frequently.

PRECIPITATION, JANUARY TO JUNE.

For the period January 1 to June 30, 1893, inclusive, the precipitation averaged about normal in the middle and south

Atlantic and New England states, the Ohio Valley and Tennessee, the upper Mississippi and Missouri valleys, the Lake region, the extreme northwest, the middle and southern plateau regions, and along the middle Pacific coast. Over the northern plateau region and along the north and south Pacific coasts the rainfall was two-tenths to three-tenths greater than usual. On the middle and southeast slopes of the Rocky Mountains the precipitation was about one-half, and in the Gulf States and on the northeast slope of the Rocky Mountains it was seven-tenths to eight-tenths of the usual amount for the period named.

YEARS OF GREATEST PRECIPITATION FOR JUNE.

At Norfolk and Cape Henry, Va., Charleston and Statesburg, S. C., and Port Eads, La., the monthly precipitation was the greatest noted for June during the respective periods of observation. The greatest precipitation for June was reported over the greater part of the Dakotas in 1890; from west-central Mississippi over central Texas in 1889; on the Pacific coast north of the 40th parallel in 1888; in Florida and the lower Rio Grande valley in 1887; in the interior of the south Atlantic states in 1886; in California south of the 40th parallel in 1884; in the lower Missouri valley in 1883; in the southern plateau region and a part of the upper Mississippi valley in 1882; on the southeast New England coast and from southern Lower Michigan over western Pennsylvania in 1881; over northern New York in 1879; in Upper Michigan in 1878; and along the south Atlantic coast in 1876.

YEARS OF LEAST PRECIPITATION FOR JUNE.

At Rochester, N. Y., Grampian and Wellsboro, Pa., Cleveland, Sandusky, and Toledo, Ohio, Lafayette, Ind., Huron, S. Dak., Santa Fe and Fort Stanton, N. Mex., Carson City, Nev., Boise Barracks, Idaho, Walla Walla, Wash., and Eureka, Cal., the monthly precipitation was the least reported during the respective periods of observation. The least precipitation for June was reported from eastern Washington over Montana and in the valley of the Red River of the North in 1889; and along the west Gulf coast and on the southeast slope of the Rocky Mountains in 1881.

EXCESSIVE PRECIPITATION.

The following tables show, by states, the number of stations reporting monthly precipitation to equal or exceed 10.00; precipitation to equal or exceed 2.50 in 24 hours; and precipitation to equal or exceed 1.00 in 1 hour in June, 1893:

Monthly precipitation to equal or exceed 10.00.

State.	Number of stations.	State.	Number of stations.
Florida	11	Georgia	1
South Carolina	9	Kansas	1
Louisiana	2	North Carolina	1
Arkansas	2		

Precipitation to equal or exceed 2.50 in 24 hours.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
Louisiana	18	1, 1-2, 2, 2-3, 3, 4, 5, 5-6, 19, 20.	North Carolina ..	10	5-6, 6-7, 7, 7-8, 14, 16, 16-17, 28.
South Carolina ..	17	1, 1-2, 2, 2-3, 6-7, 7, 7-8, 14, 15, 15-16, 16, 18, 18-19, 21, 16, 18, 18-19, 21.	Nebraska	9	3, 3-4, 9-10, 26, 27-28, 29.
Georgia	14	1, 2, 6, 8-9, 13, 13-14, 14-15, 15, 15-16, 28.	Missouri	7	4, 10, 19-20, 21, 29-30, 30.
Alabama	13	*1, 5, 5-6, 6.	Virginia	6	1-2, 16, 16-17.
Florida	11	8, 9, 13, 14-15, 15, 29-30, 30.	Kansas	5	3-4, 4, 23, 25, 26.
Tennessee	11	*1, 4-5, 5, 5-6.	Arkansas	4	3, 5, 17-18, 26, 30.
Mississippi	10	1, 1-2, 2, 4-5, 5, 8.	Iowa	4	9-10, 10, 11.
			Kentucky	4	4-5, 5.
			New Jersey	4	22, 22-23, 26.
			Illinois	3	2-3, 13, 24-25.

Precipitation to equal or exceed 2.50 in 24 hours—Continued.

State.	Number of stations.	Dates.	State.	Number of stations.	Dates.
North Dakota	3	1, 28-29, 30.	Connecticut	1	6.
Ohio	3	3-4, 4, 16.	Indiana	1	21.
Texas	3	1-2, 5-6, 18.	Washington	1	9-10.
Massachusetts	2	22, 22-23.	Minnesota	1	14.
New York	2	21-22, 26.	Pennsylvania	1	22.

Precipitation to equal or exceed 1.00 in 1 hour.

Arkansas	10	14, 17, 26, 28, 30.	New Jersey	3	6, 22.
Georgia	10	5, 6, 13, 18, 22, 28, 29.	North Dakota	3	26, 28.
Kansas	10	4, 7, 14, 21, 22, 24, 25, 26, 30.	Tennessee	2	5, 15.
Missouri	10	13, 26, 21, 25, 30.	North Carolina ..	2	5, 12.
Florida	7	4, 7, 8, 9, 14, 18, 21, 28, 30.	Illinois	2	4, 13.
Louisiana	5	3, 4, 5, 16, 17.	Pennsylvania	2	22.
Nebraska	5	3, 9, 26, 29.	Michigan	2	3.
Iowa	5	9, 10, 11, 13, 21.	Mississippi	1	16, 19.
New York	4	11, 12, 26, 29.	Connecticut	1	6.
South Carolina ..	4	2, 7, 8, 14.	Indiana	1	3.
Texas	4	12, 15, 17, 19.	Minnesota	1	14.
Alabama	3	*3, 14.	Ohio	1	4.
			Virginia	1	22.
			West Virginia ..	1	17.
			Wisconsin	1	20.

* May 31-June 1.

Table of excessive precipitation, June, 1893.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.			
		Amt.	Day.	Amt.	Time.	Day.	
Alabama.							
Camden	Inches.	Inches.		Inches.	h. m.		
Cordova		3.60	1	2.05	2 00		
Do		3.53	5				
Florence a		3.60	5				
Florence b		4.36	5				
Lynn a		3.20	5				
Maysville		2.60	5				
Mobile		3.66	5-6				
Montgomery		2.59	6				
Mount Willing		2.95	6				
Newberg		3.50	6				
Do		4.88	5				
Selma a				1.06	0 40	1	
Do				1.18	1 10	14	
Tallabee Falls		2.93	6				
Tuscaloosa		2.52	5				
Tuscumbia b		2.59	5				
Do		3.00	5				
Arkansas.							
Arkansas City				2.00	2 00	28	
Bee Branch		3.00	30	3.00	2 30	30	
Camden a		10.94		2.61	2 00	17	
Camden b		10.24	2.70				
Do		3.17	17-18	1.23	1 00	17	
Conway				1.00	0 30	30	
Fayetteville		2.75	26	2.75	1 20	26	
Lonoke				2.25	0 30	30	
Mount Nebo				1.26	1 00	30	
Osceola		3.46	3				
Ozark				0.95	0 17	14	
Stuttgart				1.19	1 00	30	
Connecticut.							
Canton		2.97	6				
West Simsbury				2.20	2 00	6	
Florida.							
Avon Park		13.49	2.65	30	1.50	1 00	18
Bristol					1.15	1 00	7
Brooksville		14.19			2.10	1 30	14
Do					1.57	0 30	21
Do					1.10	1 00	28
Chattahoochee Landing		3.90	8				
Fort Meade		13.12					
Gainesville		11.00	4.96	14-15			
Homeland		10.16	3.21	15			
Jupiter			3.30	29-30	2.20	1 00	30
Kissimmee		12.47	2.74	9			
Lake City		10.82					
Manatee		11.20					
Merritts Island			3.18	9			
Mullet Key					1.29	0 56	4
Myers		10.11	3.05	13			
Ocala			2.64	8			
Plant City			2.63	14-15			
Saint Andrews Bay			3.97	14-15			
Saint Petersburg					2.04	1 10	9
Do					1.06	1 00	30
Tampa		10.89			1.20	0 31	8
Tarpon Springs		10.72					
Georgia.							
Adairsville			2.80	6			
Alapaha			4.93	15-16			
Augusta					1.00	1 00	18
Athens a					1.42	0 30	22

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2-50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Georgia—Continued.		Inches.	Inches.	Inches.	A. m.	
Athens b.				1.15	1 00	22
Bragg		3.94	15			
Camack		3.15	13			
Columbus				1.90	0 30	28
Darien		7.00	13	7.00	2 30	13
Eastman	13.25	3.43	13-14			
Fleming		3.10	8-9			
Hawkinsville		3.29	2			
Hephzibah		3.00	1	1.40	1 00	18
Lincolnton				1.38	1 00	29
Lumpkin		3.82	28	3.82	1 30	28
McArthur		3.13	15	2.00	1 00	6
Newnan		3.10	6			
Quitman				2.50	1 30	28
Rome				2.46	1 00	5
Thomasville		4.75	14-15			
West Point		3.73	6			
Illinois.						
Cairo		3.03	2-3			
Carlinville		2.54	24-25			
East Peoria		2.65	13	2.65	0 40	13
Herrins Prairie				1.20	0 20	4
Indiana.						
Laconia				1.00	1 00	3
Marengo		2.90	21			
Iowa.						
Atlantic		4.27	9-10	3.60	2 30	9
Centerville				1.00	0 30	21
Des Moines				1.10	1 10	11
Dubuque		2.84	10	2.00	1 50	10
Indianola		2.50	11			
Monticello		2.59	10			
Mount Pleasant a.				1.12	0 40	13
Kansas.						
Athens				1.22	1 00	4
Concordia				1.07	0 35	7
Havensville		3.20	3-4			
Do		2.60	23			
Kansas City				1.13	1 00	14
Lebo	13.10	2.57	4	8.23	3 10	26
Do		8.23	26			
McPherson		3.02	4	1.50	1 00	30
Manhattan c.				3.00	1 40	25
Marion		2.86	4	1.50	1 50	30
Monument		3.00	25	2.00	0 53	24
Plainville				2.16	1 30	22
Wakefield				1.08	1 00	21
Wamego						
Wichita						
Kentucky.						
Franklin		4.49	4-5			
Greensburg		2.53	4-5			
Munfordville		3.11	5			
Russellville		3.05	4-5			
Louisiana.						
Amite	10.56	3.08	19			
Calhoun		2.65	3	1.02	0 45	16
Conshatta		3.20	2	2.80	1 05	4
Do		2.80	4			
Covington		2.52	1-2			
Donaldsonville		4.03	19			
Grand Coteau				2.02	2 00	8
Franklin		2.50	20			
Lake Charles		2.90	1			
Many	11.20	4.50	1			
Minden		3.69	3			
Monroe				1.48	0 30	17
New Orleans		3.02	5-6			
Oxford		3.24	2-3			
Paincourtville	11.39	4.20	19			
Plaquemine		4.13	19			
Shreveport		3.62	2-3	2.19	2 00	3
Sugar Ex. Station		2.68	5			
Sugartown		4.10	2			
Wallace		2.59	4			
Winnfield		3.50	3			
Massachusetts.						
Provincetown		2.86	22			
South Dennis		3.34	22-23			
Michigan.						
Berlin				1.52	1 15	3
Detroit				1.80	1 00	3
Minnesota.						
Blooming Prairie				1.00	0 30	14
Grand Meadow		2.75	14			
Mississippi.						
Batesville		3.76	4-5			
Biloxi		3.25	1			
Brookhaven		3.45	5			
Corinth		3.10	1			
Crystal Springs		3.50	5			
Fayette				1.02	1 00	16
Greenville b.				1.27	1 00	19
Halehurst		5.67	5			
Hernando		2.85	1-2			
Moss Point		3.50	8			
Pontotoc		2.64	2			
Water Valley		4.12	5			
Missouri.						
Arthur		3.31	4			

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall to inches, or more.	Rainfall 2-50 inches, or more, in 24 hours.		Rainfall of 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
Missouri—Continued.		Inches.	Inches.	Inches	h. m.	
Bethany.....				1-10	0 45	21
Brunswick.....		3-31	29-30			
Gallatin.....		3-60	30			
Glasgow.....		3-07	10			
Houston.....		2-70	19-20			
Humansville.....				1-23	0 20	20
Kansas City.....				1-08	1 00	21
Marshall.....				1-85	0 45	21
New Boston.....		3-40	21			
New Palestine.....		3-02	21	3-02	2 00	21
Osceola.....				1-52	0 50	30
Palmyra.....				1-00	1 00	25
Platte River.....				1-08	1 00	21
Princeton.....				1-50	1 00	21
Steelville.....				1-33	0 15	13
Do.....				1-43	0 45	20
Nebraska.						
Ashland.....		2-79	3-4			
Do.....		3-67	9-10			
Cooleyton.....		2-50	27-28			
David City.....		2-75	3			
Genoa.....				1-50	1 00	29
Harvard.....		3-00	29			
Kearney.....				1-04	0 43	3
Kennedy.....		2-83	26	2-83	1 00	26
Lincoln.....				1-77	1 00	9
Omaha.....		3-55	3-4	1-55	1 00	3
Tekamah.....		3-40	3			
Turlington.....		2-92	3			
Weeping Water.....		2-56	3-4			
New Jersey.						
Asbury Park.....		2-85	26			
Chester.....		2-82	22			
Dover.....		3-55	22	3-02	3 00	22
Locktown.....		2-65	22-23			
Newark a.....				1-22	1 00	6
South Orange.....				1-50	1 15	6
New York.						
Amersand.....				1-27	0 35	11
Brookfield.....				2-03	1 00	12
South Kortright.....		2-63	21-22			
Turin.....				1-32	1 20	29
Victor.....		2-55	26	2-00	2 00	26
North Carolina.						
Hatteras.....		2-56	16-17			
Highlands.....		2-50	5-6			
Horse Cove.....				1-54	1 00	5
Do.....				1-04	0 30	12
Lumberton.....		4-47	16			
Mount Airy.....		2-55	14			
Saxon.....		3-10	28			
Smithfield.....		10-12	7			
Do.....		2-60	16			
Southern Pines.....		3-20	7			
Southport.....		3-72	7-8			
Tarboro.....		3-35	6-7			
Wilmington.....		2-50	7			
North Dakota.						
Churchs Ferry.....		2-52	30			
Dawson.....		2-50	1			
Ellendale.....				2-00	0 30	26
Napoleon.....				1-45	0 30	26
Power.....		2-75	28-29	2-66	2 00	28
Ohio.						
Granville.....		3-26	3-4			
New Holland.....		2-78	4			
Warren.....		2-56	16			
West Milton.....				2-25	1 00	4
Pennsylvania.						
Forks of Neshaminy.....				1-44	0 55	22
Kennett Square.....				1-25	0 17	22
Smiths Corners.....		2-65	22			
South Carolina.						
Allendale.....		2-60	2	2-60	2 15	2
Batesburg.....	12-05	4-40	2-3			
Do.....		2-95	14	2-95	2 00	14
Brewer Mine.....		2-78	1-2			
Do.....		2-65	7			
Charleston.....	16-50	5-79	7-8	2-61	0 51	7
Do.....		4-40	15-16	1-52	0 59	8
Do.....		3-07	18-19			
Connors.....	10-73	3-30	15			
Effingham.....		4-30	15-16			
Flint Hill.....		3-05	1			
Florence.....	12-61	4-00	6-7			
Do.....		4-40	15-16			
Georgetown.....	12-40	2-52	15			
Do.....		2-70	18			
Do.....		3-17	21			
Kingstree.....		3-97	15-16			
Marion.....		3-95	16			
Martins.....	10-65					
Nichols.....		2-80	15-16			
Port Royal.....		3-28	15-16			
Pinopolis.....	11-72	2-90	15			
Saint Georges.....		3-40	15-16			
Saint Stephens.....	10-65	4-00	15-16			
Trial.....	10-67	3-30	15-16			
Tennessee.						
Byrdstown.....				1-12	0 30	15

Table of excessive precipitation—Continued.

State and station.	Monthly rainfall 10 inches, or more.	Rainfall 2.50 inches, or more, in 24 hours.		Rainfall 1 inch, or more, in one hour.		
		Amt.	Day.	Amt.	Time.	Day.
<i>Tennessee—Continued.</i>		<i>Inches.</i>	<i>Inches.</i>	<i>Inches</i>	<i>h. m.</i>	
Charleston.....	3.41	5-6	.....	.....	.....
Chattanooga.....	3.04	5-6	1.48	0 55	.....
Clarksville.....	2.89	4-5	.....	.....	.....
Clinton.....	3.30	5-6	.....	.....	.....
Columbia.....	2.80	1	.....	.....	.....
Johnsonville.....	2.96	1	.....	.....	.....
Nashville.....	2.73	*	.....	.....	.....
Pikeville.....	2.70	5-6	.....	.....	.....
Riddleton.....	3.00	*	.....	.....	.....
Rockwood.....	2.69	5-6	.....	.....	.....
Rugby.....	2.57	5	.....	.....	.....
<i>Texas.</i>						
Albany.....	1.06	1 00	15
Galveston.....	1.06	1 00	12
Do.....	1.15	1 05	17
Do.....	1.10	0 32	19
Graham.....	3.08	1-2	.....	.....	.....
Huntsville.....	4.10	18	.....	.....	.....
Orange.....	2.64	5-6	.....	.....	.....
<i>Virginia.</i>						
Birdsnest.....	4.80	16-17	.....	.....	.....
Cape Charles.....	5.70	16-17	.....	.....	.....
Cape Henry.....	5.00	16-17	.....	.....	.....
Hampton.....	3.92	16	.....	.....	.....
Irwin.....	3.03	1-2	.....	.....	.....
Norfolk.....	5.97	16-17	.....	.....	.....
Stanardsville.....	1.46	1 00	22
<i>Washington.</i>						
Tatoosh Island.....	2.55	9-10	.....	.....	.....
<i>West Virginia.</i>						
Glenville.....	1.40	1 00	17
Hinton.....	2.53	5-6	.....	.....	.....
<i>Wisconsin.</i>						
Milwaukee.....	1.60	1 30	20

* May 31st-June 1st.

MAXIMUM RAINFALL IN ONE HOUR OR LESS.

The following table is a record of the heaviest rainfall during June, 1893, for periods of five and ten minutes and one hour, as reported by regular stations of the Weather Bureau furnished with self-registering gauges:

Maximum rainfall in one hour or less.

Station.	Maximum fall in—					
	5 min.	Date.	10 min.	Date.	1 hour.	Date.
Atlanta, Ga.	Inch.		Inch.		Inch.	
Bismarck, N. Dak.	0.20	3	0.35	3	0.93	2
Boston, Mass.	0.20	29	0.28	29	0.54	29
Buffalo, N. Y.	0.04	22	0.07	22	0.15	22
Cincinnati, Ohio	0.10	2	0.13	2	0.15	2
Chicago, Ill.	0.30	22	0.55	22	0.80	22
Cleveland, Ohio	0.35	20	0.45	30	0.80	10
Denver, Colo.	0.18	4	0.25	4	0.32	4
Detroit, Mich.	0.32	3	0.55	3	1.80	3
Dodge City, Kans.	0.06	25	0.11	25	0.30	25
Duluth, Minn.	0.10	21	0.20	21	0.30	21
Eastport, Me.	0.02	17	0.04	17	0.15	17
Galveston, Tex.	0.38	19	0.58	19	1.10	19
Indianapolis, Ind.	0.45	20	0.56	20	0.58	21
Jacksonville, Fla.	0.35	15	0.55	15	0.65	30
Jupiter, Fla.	0.35	30	0.70	30	2.30	30
Kansas City, Mo.	0.25	21	0.42	23	1.08	21
Key West, Fla.	0.30	13	0.43	13	0.53	13
Marquette, Mich.	0.07	24	0.12	24	0.20	24
Memphis, Tenn.	0.20	19	0.30	2	0.40	2
Milwaukee, Wis.	0.35	4	0.25	4	1.00	20
New Orleans, La.	0.30	6	0.47	6	0.66	6
New York, N. Y.	0.60	6	0.82	6	0.90	6
Norfolk, Va.	0.20	6	0.40	6	0.66	16, 17
Omaha, Nebr.	0.20	3	0.30	3	4.55	3
Philadelphia, Pa.	0.20	22	0.31	22	0.57	22
Pittsburg, Pa.						
Portland, Oregon	0.01	10	0.02	10	0.08	10
Saint Louis, Mo.	0.15	12	0.21	12	0.42	12
Saint Paul, Minn.	0.26	21	0.39	21	0.68	21
Salt Lake City, Utah						
San Diego, Cal.						
San Francisco, Cal.						
Savannah, Ga.	0.29	7, 22	0.48	7	0.88	7
Tampa, Fla.	0.40	8	0.70	8	1.25	8
Washington, D. C.	0.22	26	0.30	26	0.52	26
Wilmington, N. C.	0.25	7, 14	0.46	7	0.67	7

* Record incomplete. † Self-register out of order. ‡ Less than 0.05 in 1 hour.

The following tables show the number of years for which monthly precipitation to equal or exceed 10.00 inches, daily

precipitation to equal or exceed 2.50 inches, and hourly precipitation to equal or exceed 1.00 inch has been reported in the several states and territories for June during the last 23 years:

Excessive monthly precipitation.

State.	No. years noted.	State.	No. years noted.
Florida	17	New Jersey	2
Iowa	16	Virginia	2
Texas	13	Maryland	2
Georgia	13	Vermont	2
Louisiana	13	Colorado	1
Missouri	11	Connecticut	1
Illinois	9	Rhode Island	1
Nebraska	9	Washington	1
Kansas	9	Arkansas	1
North Carolina	9	Arizona	0
Alabama	8	Delaware	0
Indiana	8	District of Columbia	0
South Carolina	8	Idaho	0
Minnesota	7	Kentucky	0
New Hampshire	6	Maine	0
Ohio	5	Massachusetts	0
Tennessee	5	Montana	0
New York	5	Nevada	0
Wisconsin	5	New Mexico	0
Michigan	4	California	0
Pennsylvania	4	Oregon	0
Mississippi	3	Utah	0
The Dakotas	3	West Virginia	0
Indian Territory	2	Wyoming	0

Excessive daily precipitation (24 hours).

Texas	20	Arkansas	10
Florida	19	Connecticut	8
Illinois	19	New Jersey	7
Kansas	18	Indian Territory	6
Iowa	17	Kentucky	6
Missouri	17	Maine	5
Georgia	15	Wisconsin	5
Nebraska	15	Vermont	4
The Dakotas	15	West Virginia	4
Minnesota	14	Montana	3
New York	14	New Hampshire	3
Michigan	13	Colorado	2
North Carolina	13	Delaware	2
Pennsylvania	13	Rhode Island	2
Tennessee	13	Idaho	1
South Carolina	13	New Mexico	1
Indiana	12	Wyoming	1
Ohio	12	Washington	1
Maryland	12	Arizona	0
Massachusetts	11	District of Columbia	0
Alabama	11	Nevada	0
Louisiana	11	California	0
Mississippi	11	Oregon	0
Virginia	11	Utah	0

Excessive hourly precipitation.

Kansas	15	New Jersey	5
Texas	17	Kentucky	3
Georgia	15	Maryland	3
Iowa	15	Connecticut	3
Florida	14	West Virginia	3
Illinois	14	Colorado	2
Michigan	14	Maine	2
Nebraska	13	Massachusetts	2
Tennessee	12	New Mexico	2
Missouri	11	Indian Territory	2
North Carolina	11	New Hampshire	2
Pennsylvania	11	Wyoming	2
The Dakotas	11	Arizona	1
Ohio	10	Idaho	1
Virginia	10	Montana	1
Louisiana	9	Vermont	1
Minnesota	9	Delaware	0
South Carolina	9	District of Columbia	0
Indiana	8	Nevada	0
Arkansas	7	California	0
Mississippi	7	Oregon	0
New York	7	Rhode Island	0
Wisconsin	7	Utah	0
Alabama	5	Washington	0

The following tables give exceptionally heavy monthly, daily, and hourly precipitation reported for June during the last 23 years:

Monthly.

Station and state.	Amt.	Year.	Station and state.	Amt.	Year.
Alexandria, La.	Inches.		Hypoluxo, Fla.	Inches.	
Cheneyville, La.	36.91	1886	Sylvan Park, Mo.	23.25	1892
California, Mo.	26.59	1886	Archer, Fla.	21.86	1872
	23.90	1891		20.19	1892

Daily (24 hours).

Station and state.	Amount.	Date.	Station and state.	Amount.	Date.
Alexandria, La.	22.27	16, 1886	Plattsmouth, Nebr.	5.60	13-14, 1874
Point Pleasant, La.	16.55	13-14, 1878	Greenboro, N. C.	5.60	17, 1876
Pensacola, Fla.	10.70	30, 1887	Cameron, La.	5.57	22, 1892
Sour Lake, Tex.	9.70	18, 1888	Crowley, La.	5.50	6, 1889
Memphis, Tenn.	9.67	8-9, 1877	Plattsmouth, Nebr.	5.52	8-9, 1874
Orange, Tex.	9.55	22-24, 1892	Hardeeville, S. C.	5.50	9, 1883
Memphis, Tenn.	8.95	7-8, 1877	Evergreen, Ala.	5.50	27, 1888
Clear Lake, Nebr.	8.75	1, 1875	Rockford, Iowa	5.50	23, 1875
Mobile, Ala.	8.50	25-27, 1888	New Orleans, La.	5.47	29-30, 1887
Lebo, Kans.	8.23	26, 1893	Travere, S. Dak.	5.40	5-6, 1892
Readington, N. J.	8.10	25-26, 1884	Caldwell, N. Y.	5.40	25-26, 1884
Cunningham, Kans.	8.00	19-20, 1890	Aberdeen, Miss.	5.40	21, 1886
Syracuse, N. Y.	8.00	8, 1876	Corry, Pa.	5.36	4, 1892
Nashua, Iowa	7.90	14, 1880	Jeanerette, La.	5.35	16, 1892
Wellsboro, Pa.	7.45	* 1889	Boston, Mass.	5.35	9-10, 1875
Little Rock, Ark.	7.40	28, 1879	Sycamore, Ill.	5.33	22-23, 1892
Colebrook, Conn.	7.40	7-8, 1874	Fort Adams, R. I.	5.30	9-10, 1875
Salisbury, N. C.	7.39	10, 1883	Fort Maginnis, Mont.	5.28	20-21, 1888
Purdy, Tenn.	7.10	14-15, 1876	Galveston, Tex.	5.27	23-24, 1880
Salisbury, N. C.	7.10	25, 1885	Merritts Island, Fla.	5.27	23, 1889
Wilmington, N. C.	7.03	30, 1876	Saint Marks, Fla.	5.24	9, 1870
Darien, Ga.	7.00	13, 1893	Wilmington, N. C.	5.22	2, 1882
Columbia, Tex.	7.00	17, 1888	Fort Clark, Tex.	5.20	18-19, 1877
Marmaton, Kans.	6.60	15-16, 1889	Franklin, La.	5.20	27, 1892
New Ulm, Tex.	6.50	17-18, 1886	Marquette, Mich.	5.20	20-21, 1878
Fort Scott, Kans.	6.45	15-16, 1889	Mascoutah, Ill.	5.20	18, 1892
Galveston, Tex.	6.40	17, 1888	Yankton, S. Dak.	5.20	30, 1875
Archer, Fla.	6.34	27, 1892	Carthage, Ohio	5.18	20, 1876
Emilie, La.	6.32	23-23, 1890	Raleigh, N. C.	5.18	28-29, 1889
Alexandria, La.	6.31	15, 1886	Des Moines, Iowa	5.14	19-20, 1881
Saint Marys, Ga.	6.30	13-13, 1877	Jacksonville, Fla.	5.12	10-11, 1885
Charleston, S. C.	6.16	11-12, 1876	Savannah, Ga.	5.12	14-15, 1876
Savannah, Ga.	6.10	25-27, 1887	Melissa, Tex.	5.10	28, 1878
Cleburne, Tex.	6.04	2, 1884	Helena, Ark.	5.10	8, 1877
Columbia, Tex.	6.00	7-8, 1890	Fort Randall, S. Dak.	5.10	30, 1875
Logan, Iowa	6.00	29-30, 1878	Cadiz, Wis.	5.07	13-14, 1890
Larned, Kans.	6.00	19, 1878	Bellefontaine, Ohio	5.06	5-6, 1877
Norfolk, Va.	5.97	16-17, 1893	Fayette, Iowa	5.04	3-4, 1890
Block Island, R. I.	5.97	9-10, 1881	Minden, La.	5.03	23, 1892
New London, Conn.	5.97	25-26, 1884	Omaha, Nebr.	5.03	17, 1875
Cheneyville, La.	5.90	10, 1889	Monroe, La.	5.01	5-6, 1890
Cameron, La.	5.89	17-18, 1892	Beardstown, Ill.	5.00	21, 1885
Edgard, La.	5.85	23, 1890	Grand Meadow, Minn.	5.00	18, 1892
Mattoon, Ill.	5.85	27, 1888	Marengo, Ind.	5.00	18, 1890
Charleston, S. C.	5.79	8, 1893	Tannersville, N. Y.	5.00	26-27, 1889
Kingman, Kans.	5.75	19, 1890	Sandwich, Ill.	5.00	8, 1874
Somerset, Mass.	5.74	9-10, 1875	Danville, Ky.	5.00	17, 1878
Cape Charles, Va.	5.70	16-17, 1893	Burlington, Kans.	5.00	13, 1876
Haselhurst, Miss.	5.67	5, 1893	Ft. Independence, Mass.	5.00	10, 1875
Helena, Ark.	5.60	9, 1877	Cape Henry, Va.	5.00	16-17, 1893

* May 31st-June 1st.

One hour and less.

Station and state.	Amount.	Time.	Date.
New York, N. Y.	0.60	0 05	6, 1893
Cleveland, Ohio	0.47	0 05	3, 1891
Indianapolis, Ind.	0.45	0 05	20, 1893
Tampa, Fla.	0.40	0 05	8, 1893
Bismarck, N. Dak.	0.40	0 05	19, 1890
Savannah, Ga.	0.40	0 05	9, 1889
Do	0.40	0 05	27, 1889
Jupiter, Fla.	0.40	0 05	19, 1891
Jacksonville, Fla.	0.38	0 05	15, 1893
Galveston, Tex.	0.38	0 05	19, 1893
Augusta, Ga.	0.37	0 05	27, 1888
Jupiter, Fla.	0.35	0 05	30, 1893
Chicago, Ill.	0.35	0 05	20, 1893
Galveston, Tex.	0.35	0 05	7, 1890
New York, N. Y.	0.35	0 05	6, 1890
New Orleans, La.	0.35	0 05	22, 1890
Savannah, Ga.	0.35	0 05	11, 1890
Galveston, Tex.	0.35	0 05	29, 1891
Kansas City, Mo.	0.35	0 05	16, 1891
Detroit, Mich.	0.32	0 05	3, 1893
Cleveland, Ohio	0.30	0 05	10, 1891
Norfolk, Va.	0.30	0 05	13, 1890
Bismarck, N. Dak.	0.30	0 05	14, 1891
Key West, Fla.	0.30	0 05	13, 1893
New Orleans, La.	0.30	0 05	6, 1893
Cincinnati, Ohio	0.30	0 05	22, 1893
Washington, D. C.	0.30	0 05	21, 1891
Wilmington, N. C.	0.30	0 05	8, 1891
Detroit, Mich.	0.30	0 05	16, 1889
Do	0.29	0 05	22, 1891
Savannah, Ga.	0.29	0 05	7, 1893
Do	0.29	0 05	22, 1893
Detroit, Mich.	0.28	0 05	28, 1890
Saint Paul, Minn.	0.26	0 05	23, 1890
Saint Louis, Mo.	0.26	0 05	21, 1893
New York, N. Y.	0.25	0 05	17, 1889
Jupiter, Fla.	0.25	0 05	3, 1890
Kansas City, Mo.	0.25	0 05	21, 1893
Milwaukee, Wis.	0.25	0 05	4, 1893
Wilmington, N. C.	0.25	0 05	7, 1893
Do	0.25	0 05	14, 1893
Marquette, Mich.	0.25	0 05	27, 1890

One hour and less--Continued.

Station and state.	Amount.	Time.	Date.
Saint Louis, Mo.	0.25	0 45	17, 1890
Washington, D. C.	0.23	0 05	13, 1890
Cincinnati, Ohio	0.23	0 05	3, 1891
Dodge City, Kans.	0.23	0 05	5, 1891
Eastport, Me.	0.23	0 05	24, 1891
Jupiter, Fla.	0.23	0 05	13, 1889
Memphis, Tenn.	0.23	0 05	16, 1891
Do	0.23	0 05	29, 1891
Saint Louis, Mo.	0.23	0 05	16, 1891
New York, N. Y.	0.82	0 10	6, 1893
Jupiter, Fla.	0.70	0 10	30, 1893
Tampa, Fla.	0.70	0 10	8, 1893
Galveston, Tex.	0.70	0 10	7, 1890
New Orleans, La.	0.70	0 10	22, 1890
Savannah, Ga.	0.65	0 10	27, 1889
Bismarck, N. Dak.	0.61	0 10	19, 1890
Cleveland, Ohio	0.61	0 10	3, 1891
Norfolk, Va.	0.60	0 10	18, 1890
Galveston, Tex.	0.58	0 10	19, 1893
Indianapolis, Ind.	0.56	0 10	20, 1893
Cleveland, Ohio	0.55	0 10	10, 1890
New York, N. Y.	0.55	0 10	6, 1890
Cincinnati, Ohio	0.55	0 10	22, 1893
Detroit, Mich.	0.55	0 10	3, 1893
Jacksonville, Fla.	0.55	0 10	15, 1893
Savannah, Ga.	0.55	0 10	11, 1891
Bismarck, N. Dak.	0.55	0 10	14, 1891
Toledo, Ohio	0.50	0 10	13, 1888
Memphis, Tenn.	0.60	0 11	20, 1888
Anna, Ill.	1.19	0 13	20, 1878
Fort Randall, S. Dak.	1.50	0 15	28, 1873
Southington, Conn.	1.45	0 15	29, 1879
Steelville, Mo.	1.33	0 15	13, 1893
Gratiot, Ohio	1.22	0 16	9, 1892
Kennett Square, Pa.	1.25	0 17	22, 1893
Osark, Ark.	0.95	0 17	14, 1893
Clairinda, Iowa	1.73	0 20	20, 1889
Alapaha, Ga.	1.70	0 20	26, 1890
Potosi, Wis.	1.50	0 20	14, 1890
Webster, S. Dak.	1.33	0 20	24, 1884
Humansville, Mo.	1.23	0 20	20, 1893
Herrins Prairie, Ill.	1.20	0 20	4, 1893
Lynchburg, Va.	1.02	0 20	15, 1879
Sheldon, Minn.	1.35	0 22	18, 1890
Do	2.07	0 25	23, 1890
Clear Creek, Mont.	2.00	0 25	13, 1879
Lonoke, Ark.	2.35	0 30	30, 1893
Denmark, Iowa	2.03	0 30	25, 1879
Boston, Mass.	2.00	0 30	29, 1879
Alpena, Mich.	2.00	0 30	24, 1880
Ellendale, N. Dak.	2.00	0 30	26, 1893
Statesville, N. C. (near)	2.00	0 30	17, 1876
Galveston, Tex.	2.00	0 30	17, 1888
Kewick, Va.	2.00	0 30	3, 1881
Diamond, Ga.	2.00	0 30	21, 1889
Columbus, Ga.	1.90	0 30	28, 1893
Sandusky, Ohio	1.90	0 30	17, 1881
Missoula, Mont.	1.84	0 30	13, 1875
Batesville, Miss.	1.72	0 30	24, 1892
Louisville, Miss.	1.59	0 30	17, 1889
Brooksville, Fla.	1.57	0 30	21, 1893
Newton, Iowa	1.55	0 30	26, 1881
Carrington, N. Dak.	1.50	0 30	14, 1892
Canton, Pa.	1.50	0 30	27, 1892
Larrabee, Iowa	1.84	0 31	19, 1892
Jacksonville, Fla.	1.81	0 31	26, 1875
Charlotte, N. C.	2.08	0 34	30, 1889
North Lewisburg, Ohio	1.60	0 35	27, 1879
Palestine, Tex.	1.96	0 36	3, 1883
East Peoria, Ill.	2.65	0 40	13, 1893
Oxanna, Ala.	2.00	0 40	25, 1892
Uniontown, Pa.	2.35	0 40	4, 1892
La Crosse, Wis.	1.37	0 40	21, 1884
Wytheville, Va.	2.70	0 44	25, 1875
Dodge City, Kans.	3.24	0 45	19, 1888
Amara, Iowa	2.17	0 45	19, 1878
Charleston, S. C.	2.61	0 50	7, 1893
Wellsboro, Pa.	2.60	0 50	19, 1882
Cumberland, Md. a	4.64	1 00	4, 1892
Des Moines, Iowa	3.00	1 00	24, 1879
Merritts Island, Fla.	3.00	1 00	23, 1889

MONTHLY SNOWFALL (in inches and tenths).

Monthly snowfall was reported as follows: *Colorado*.—Pikes Peak, 7.7; Sunnyside, 4; Red Cliff, 2.4; Breckenridge, 2.2; Gold Hill, 1.8; Rico, 0.3; Como (near), 0.1. *Nevada*.—Hot Springs, 0.4.

HAIL.

Description of the more severe hailstorms reported for the month is given under "Local storms."

Hail was reported as follows: 1st, *Colorado*, Florida, Georgia, Missouri, North Carolina, South Carolina, Tennessee, and Texas. 2d, *Arkansas*, *Colorado*, *Georgia*, *Minnesota*, *North Carolina*, *North Dakota*, *South Dakota*, *Texas*,

and West Virginia. 3d, Colorado, Kansas, Michigan, and Nebraska. 4th, Arkansas, Kansas, Nebraska, Texas, Virginia, and Wyoming. 5th, Wyoming. 6th, Minnesota. 7th, Minnesota and New Mexico. 8th, Minnesota and North Dakota. 9th, Illinois, Minnesota, and Nebraska. 10th, Iowa, Missouri, and Washington. 11th, New Hampshire, New Mexico, New York, Oregon, Pennsylvania, and Vermont. 12th, Illinois, New Mexico, North Carolina, Oregon, South Carolina, Tennessee, and Wisconsin.

13th, Alabama, Florida, Missouri, Montana, Nevada, North Carolina, South Carolina, Tennessee, Washington, and Wisconsin. 14th, Colorado, Illinois, Iowa, Kansas, Minnesota, Mississippi, North Dakota, Ohio, South Carolina, South Dakota, Tennessee, Wisconsin, and Wyoming. 15th, Kansas, Michigan, Ohio, Pennsylvania, and Texas. 16th, Indiana, Michigan, Ohio, Texas, and Wisconsin. 17th, Arkansas, Georgia, and Ohio. 18th, Maine, New Mexico, North Dakota, Oregon, South Carolina, and Washington. 19th, Georgia and Oregon. 20th, Indiana, Louisiana, Minnesota, and South

Dakota. 21st, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Carolina, and Wisconsin. 22d, Georgia, Iowa, New York, North Carolina, South Carolina, and Virginia.

23d, Florida, Iowa, Kansas, Michigan, and Minnesota. 24th, Michigan, Ohio, and South Dakota. 25th, Alabama, Colorado, Illinois, Indiana, Kansas, Michigan, Missouri, Nebraska, Ohio, Oklahoma, Pennsylvania, and South Dakota. 26th, Colorado, Illinois, Indiana, Nebraska, North Carolina, North Dakota, Ohio, Oklahoma, South Dakota, Tennessee, Utah, and Virginia. 27th, Arkansas, Florida, Kansas, Montana, Nebraska, New York, and Pennsylvania. 28th, Alabama, Colorado, Georgia, Indiana, Kansas, Nebraska, North Carolina, North Dakota, Ohio, South Dakota, Virginia, West Virginia, and Wyoming. 29th, Colorado, Kentucky, Minnesota, Nebraska, North Dakota, South Dakota, Virginia, West Virginia, and Wyoming. 30th, Arkansas, Colorado, Connecticut, Indiana, Kansas, Minnesota, Missouri, Nebraska, New Hampshire, New York, and South Dakota.

WINDS.

The prevailing winds in June, 1893, are shown on Chart II by arrows flying with the wind.

In the New England and south Atlantic states, the Ohio Valley, and the Lake region the winds were generally from southeast to southwest; in the middle Atlantic states, from north to east; over the Florida Peninsula, from the southeast; in the west Gulf states, the upper Mississippi and Missouri valleys, and on the southeast slope of the Rocky Mountains, from southeast to south; on the northeast slope of the Rocky Mountains, and on the middle Pacific coast, from southwest to northwest; on the middle-eastern slope of the Rocky Mountains, from east to south; over the northern plateau region, and on the north Pacific coast, from south to west; and in the east Gulf states, Tennessee, the Red River of the North Valley, and the southern and middle plateau regions, variable.

HIGH WINDS.

(In miles per hour.)

Wind velocities of 50 miles, or more, per hour were reported at regular stations of the Weather Bureau as follows:

6th, 51, s., at Fort Canby, Wash. 7th, 59, s., at Huron, S. Dak. 9th, 58, s., at Fort Canby, Wash. 10th, 60, s., at Fort Canby, Wash. 11th, 56, sw., at Buffalo, N. Y. 13th, 86, sw., at Pikes Peak, Colo. 14th, 59, s., at Fort Canby, Wash.; 56, s., at Amarillo, Tex. 16th, 55, s., at Southport, N. C.; 54, e., at Charleston, S. C. 21st, 50, nw., at Saint Louis, Mo.; 50, w., at Red Wing, Minn. 22d, 60, w., at Fort Hill, S. C.; 56, s., at Carson City, Nev. 23d, 56, w., at Fort Buford, N. Dak.; 50, se., at Huron, S. Dak. 26th, 60, nw., at Colorado Springs, Colo.; 54, e., at Pueblo, Colo. 29th, 50, w., at Amarillo, Tex. 30th, 54, n., at Little Rock, Ark.

LOCAL STORMS.

(75th meridian time is used at regular Weather Bureau stations.)

1st.—Very heavy rain fell in South Carolina, Georgia, Alabama, Tennessee, and Ohio, and thunderstorms were reported in South Carolina, Ohio, and Michigan. At Columbia, S. C., 2.12 inches of rain fell the night of the 1st. A severe thunderstorm occurred at Longshore, S. C. Exceptionally heavy rain, high wind, and hail were reported at Hephzibah, Ga. Crops on low ground about Newburg, Ala., were damaged by heavy rain. A wind and hail storm at night caused considerable damage near Weatherford, Tex. At Nashville, Tenn., heavy rain, with thunder and high wind, continued during the afternoon and at night; many bridges

were washed away, and much damage was caused to crops on low land. In Noble and Huntington counties, Indiana, a number of buildings were destroyed by high wind. Violent thunderstorms occurred over a large area of Lower Michigan in the evening, causing damage of a minor character.

2d.—Heavy thunderstorms were reported in Georgia, Tennessee, Nebraska, and North Dakota, and severe local storms occurred in Texas. A destructive local storm passed through the southeastern part of Lavaca County, Tex., destroying everything in a path about one-half mile in width and 6 to 8 miles in length. A heavy thunder, rain, and wind storm visited San Antonio, Tex., in the morning. A large waterspout passed over the upper portion of Rio Grande City, Tex. A tornado moved east near Spanish Camp, Tex., between 3 and 4 p. m. The path of the storm was about 50 yards in width. Two persons were killed, and the damage to buildings was placed at \$700.

3d.—Severe thunderstorms were reported in Western New York, the Ohio Valley, Michigan, and Nebraska. At Detroit, Mich., streets and cellars were flooded by heavy rain. A heavy hailstorm of short duration was reported at Hays City, Kans. Damage by high wind and heavy rain was reported at Minneapolis, Kans. Hail caused considerable damage about David City, Nebr. At Omaha, Nebr., several houses were struck by lightning, and damage resulted from heavy rain. A severe thunder, rain, and hail storm moved southeast over Kearney, Nebr., in the afternoon.

4th.—Severe thunderstorms occurred in Maryland, Florida, the Ohio Valley and Tennessee, Missouri, Kansas, Arkansas, and Texas. Several houses were struck by lightning at Knoxville, Tenn. About 1 p. m. a severe thunder and rain storm moved north of east over Saint Louis, Mo., in a path 300 to 500 feet in width and about one-half mile in length, injuring 2 persons and causing considerable damage of a minor character. Near Fort Smith, Ark., a man was killed by lightning.

5th.—Thunderstorms, with heavy rain, occurred in southern New England, eastern New York, and New Jersey. Several buildings were struck by lightning.

7th.—A violent local storm was reported in the afternoon at Morris Island and adjacent islands southeast of Charleston, S. C. At Charleston the rainfall was exceptionally heavy, and a waterspout was observed north-northeast of that station. A severe thunderstorm occurred at Tampa, Fla., in the early morning.

9th.—During a heavy thunderstorm at Chicago, Ill., in the evening, damage was caused by hail, and fire, caused by lightning, destroyed property to the value of \$25,000. A severe thunderstorm visited Omaha, Nebr., in the evening.

10th.—Thunderstorms occurred in northern Illinois and Lower Michigan, and severe wind, rain, and hail storms visited Iowa. Near Kalamazoo, Mich., a man was killed by lightning. Damage by high wind was reported in Harrison and Crawford counties, Iowa. Exceptionally heavy rain caused considerable damage about Dubuque, Iowa.

11th.—Severe thunderstorms occurred in New York. At Albany a church was struck by lightning and damage was caused by wind. Some damage was caused by lightning and hail at Turin, N. Y. A severe southwest gale prevailed at Buffalo, N. Y., in the morning.

12th.—Heavy thunderstorms were reported in eastern New York, the Carolinas, Tennessee, and Missouri. A destructive hail and rain storm moved east over Burgaw, about 25 miles north of Wilmington, N. C., about 4 p. m. Heavy hail was also reported northwest and west of Wilmington. Thunder and hail storms caused some damage about Fort Hill, S. C. A thunderstorm, with heavy rain, occurred at Chattanooga, Tenn., in the afternoon. A heavy hailstorm was reported northeast of Chattanooga. The path of the hailstorm was about 3 miles in length and one-half mile in width. Crops were damaged by hail near Golconda, Ill. A severe thunderstorm occurred at Saint Louis, Mo., in the afternoon.

13th.—Hail damaged crops about Newnan, Ga. At Genoa, Ill., a residence was struck by lightning. Damage by hail was reported at Hillsboro, Wis. Heavy rain caused damage about Palmyra, Mo. At night damage of a minor character was caused by lightning at Rapid City, S. Dak.

14th.—Destructive hailstorms occurred in Illinois, and thunderstorms were reported in Wisconsin, Missouri, the Missouri Valley, and Wyoming. Hail caused great damage to crops about Wayland, Ill. Damage by hail and wind was reported at Lancaster, Wis.

15th.—Thunderstorms were reported in Lower Michigan, Ohio, Iowa, and Florida. A severe thunder and hail storm visited Ann Arbor, Mich. At Hastings, Mich., two persons were struck by lightning. In Ohio several buildings were struck by lightning, and damage was caused by hail. A man was killed by lightning near Newton, Iowa. A heavy rain and wind storm prevailed over the east Gulf and along the south Atlantic and Florida coasts, causing considerable damage to crops. At Jacksonville, Fla., a thunderstorm about noon was followed by high wind and heavy rain. At Tampa, Fla., the wind reached a velocity of 36 miles per hour from the south at noon, and wharves along the bay and river front were submerged.

16th.—Heavy rain and high winds prevailed along the middle Atlantic and Carolina coasts. At Eden Center, N. Y., a house was struck and one person was killed by lightning. High wind caused some damage along the New Jersey coast, and exceptionally heavy rain and high winds occurred along the Virginia coast. At Wilmington, N. C., the maximum wind velocity was 36 miles per hour from the southeast. A severe thunderstorm visited Corpus Christi, Tex., in the afternoon. A destructive local storm was reported at Laredo, Tex., in the morning. Heavy thunderstorms were noted in Ohio and Lower Michigan.

17th.—A man was killed by lightning near Holly Springs, Miss.

18th.—Destructive hailstorms were reported at Mattawamkeag, Me., and Gallinas Spring, N. Mex.

19th.—A severe hailstorm occurred near Marietta, Ga. At Saint Louis, Mo., a thunderstorm from the southeast began 5.18 and ended 7.15 p. m. In the suburbs the storm was very severe; trees 6 to 8 inches in diameter were broken off, a horse

was killed by lightning, and a house was struck by lightning and burned.

20th.—A house was struck by lightning at Little Rock, Ark. Stock was killed by lightning at Springfield, Ill., and Kokomo, Ind. A heavy hailstorm was reported south of Webster, S. Dak.

21st.—Heavy thunderstorms occurred in Florida, Kentucky, Lower Michigan, Wisconsin, and Minnesota, and severe local storms were reported in Iowa, Missouri, and Kansas. At Manatee, Fla., a house was struck by lightning. A building was struck by lightning at Tampa, Fla. Between 4.30 and 5 p. m. a heavy thunder, rain, and hail storm moved northeast south of Adair, Iowa. The path of the storm was 200 to 400 yards in width. Buildings valued at \$6,000 to \$7,000 were destroyed. A thunderstorm, with heavy rain, moved southeast over Anita, Iowa, between 5 and 6 p. m. A windstorm visited Clinton, Iowa, from 7.30 to 9 p. m. A severe thunderstorm moved southeast over Conception, Mo., about 4.30 p. m., destroying small buildings and killing three persons. Estimated value of property destroyed at Conception, \$30,000. Damage was caused by high wind, hail, and heavy rain about New Palestine, Akron, Miami, New Boston, Rea, and Sublette, Mo. At 6.30 p. m. a tornado moved northeast in a path about 200 yards in width and over four miles in length near Williamstown and Perry, Kans., killing 10 persons, and destroying property valued at \$20,000. Heavy rain fell before and heavy thunder followed the passage of the storm. A severe thunder, rain, and hail storm moved south over Winfield, Kans., about 8 p. m., destroying property to the estimated value of \$25,000.

22d.—Thunderstorms, with heavy rain, occurred in the middle and south Atlantic and south New England states and the Ohio Valley. In parts of Virginia, the Carolinas, and Georgia the storms were attended by hail. At Dallas, Ga., a thunder, rain, and hail storm moved east at 2.30 p. m., unroofing 12 buildings. Near Parkersburg, W. Va., a man was killed by lightning.

23d.—Local storms occurred in Kansas and western Iowa. At Concordia, Kans., exceptionally large hail fell in the late afternoon. The larger stones measured 13 to 16 inches in circumference. Hail damaged corn and small grain in the northwest part of Guthrie County, Iowa. A severe thunderstorm occurred at Columbia, Mo., at night.

25th.—Thunderstorms occurred in Pennsylvania, the Ohio Valley and Tennessee, and Missouri. Fruit was damaged by hail about Erie, Pa. Hailstorms were also reported at Edinboro and Grampian, Pa. Destructive hailstorms were reported at Warren and Colebrook, Ohio. Hail was also reported at Steffenville and Gainesville, Mo.

26th.—In the early morning several houses in Atlanta, Ga., were struck by lightning. A thunderstorm and cloudburst occurred at Lebo, Kans., between 12.40 and 3.50 p. m. 8.23 inches of rain fell, flooding fields. A severe thunder and hail storm was reported at Kennedy, Nebr. In the evening the wind reached a velocity of 60 miles per hour from the northwest at Colorado Springs, Colo.

27th.—Thunder and hail storms occurred in Florida. A severe thunder and wind storm passed about 12 miles southwest of Beaver City, Nebr.

28th.—Destructive thunder and hail storms were reported in Virginia, West Virginia, North Carolina, Ohio, North Dakota, and Nebraska.

29th.—Hailstorms were reported in Virginia, Kentucky, Colorado, and Wyoming, and thunderstorms occurred in Florida, Minnesota, and Nebraska. At Pensacola, Fla., a house was struck by lightning. A man was killed by lightning near Willmar, Minn. Hail damaged crops about Table Rock, Colo., and Sheridan, Wyo.

30th.—Thunderstorms occurred in New England, and

hailstorms in Connecticut and New Hampshire. At South Weathersfield, Conn., a severe hailstorm occurred about 3 p. m. Some damage by hail was reported at Littleton, N. H. A boy was killed by lightning near Gloversville, N. Y. A heavy thunder and rain storm occurred at Jupiter, Fla., in

the afternoon. During a thunderstorm in the evening at Little Rock, Ark., the wind reached a velocity of 54 miles per hour. A severe thunder, rain, and hail storm visited Concordia, Kans., in the morning. Thunderstorms were reported in Missouri and South Dakota.

INLAND NAVIGATION.

FLOODS.

The month opened with the Mississippi River above the danger-line from Helena, Ark., southward. At Vicksburg, Miss., the stage of water, 46.7 feet, was the highest noted for the month. At Nashville, Tenn., the Tennessee River rose rapidly and reached 19.4 feet on the gauge, a rise of 9.1 feet in 24 hours. At Cairo, Ill., the Ohio River was rising slowly and passed the danger-line by the morning of the 2d. The Ohio River continued to rise at Cairo until the 6th, when a stage of 43.3 feet, 3.3 feet above the danger-line was reached. The Mississippi River passed the danger-line at Memphis, Tenn., on the 7th, and the maximum stage of the month at that point, 33.5 feet, was noted from the 11th to the 14th. On the 13th a small break occurred in the Magnolia Mound levee near Baton Rouge, La.; the break was closed by the night of the 13th. On the 16th a crevasse was reported near Napoleonville, Assumption Parish, La. The evening of the 18th a break occurred in the levee on the Reserve plantation at Saint Peters, La. The night of the 18th a break occurred in the levee at Convent, La. By the 22d the Reserve crevasse had been closed. The evening of the 23d a serious crevasse occurred in front of the Rescue plantation on the left bank of the river about one mile above Ascension Parish. The Rescue crevasse increased in width during the 24th and 25th, and caused a gradual fall in the river below that point. At New Orleans, La., the water, which reached a stage of 17.9 feet the evening of the 23d and continued nearly stationary until noon of the 24th, fell one foot by the close of the month.

STAGE OF WATER IN RIVERS.

The following table shows the danger-points at the various river stations; the highest and lowest stages for the month, with the dates of occurrence; and the monthly ranges:

Heights of rivers above low-water mark, June, 1893.

Stations.	Danger-point on gauge.	Highest water.		Lowest water.		Monthly range.
		Height.	Date.	Height.	Date.	
<i>Red River.</i>						
Shreveport, La.	29.2	21.8	16-17	14.8	30	7.0
<i>Arkansas River.</i>						
Fort Smith, Ark.	22.0	16.8	2	4.0	27	12.8
Little Rock, Ark.	23.0	21.5	3	7.3	30	14.2
<i>Missouri River.</i>						
Fort Buford, N. Dak.	25.0	16.3	17	10.8	1-3	5.5
Bismarck, N. Dak.	75.0	11.6	18	5.5	4, 5	6.1
Pierre, S. Dak.	13.0	7.8	21, 26	0.4	12, 13	7.4
Sioux City, Iowa	18.7	14.1	22	9.7	12, 13	4.4
Omaha, Nebr.	18.0	12.9	23, 24	8.9	14, 15	4.0
Kansas City, Mo.	21.0	17.2	26	12.2	19	5.0
<i>Mississippi River.</i>						
Saint Paul, Minn.	14.0	9.5	1	4.4	30	5.1
La Crosse, Wis.	10.0	10.0	1, 2	4.6	30	5.4
Dubuque, Iowa	16.0	12.9	2, 4, 5	6.0	30	6.9
Davenport, Iowa	15.0	10.4	1	4.4	30	6.0
Keokuk, Iowa	14.0	12.2	1	5.5	30	6.7
Hannibal, Mo.	17.0	14.0	1	7.0	30	7.0
Saint Louis, Mo.	30.0	26.0	4	17.6	23	10.4
Cairo, Ill.	40.0	43.3	6	21.0	26	22.3
Memphis, Tenn.	33.0	33.5	11-14	16.5	29	17.0
Vicksburg, Miss.	41.0	46.7	1	42.3	30	4.4
New Orleans, La.	13.0	17.9	24	16.0	4	1.9
<i>Ohio River.</i>						
Parkersburg, W. Va.	38.0	9.5	7	4.6	18	4.9
Cincinnati, Ohio	45.0	21.0	5	10.2	19	10.8
Louisville, Ky.	24.0	10.0	7	5.4	20	4.6
<i>Cumberland River.</i>						
Nashville, Tenn.	40.0	32.0	2	3.8	30	28.2
<i>Tennessee River.</i>						
Chattanooga, Tenn.	33.0	20.7	8	4.1	30	16.6
Knoxville, Tenn.	29.0					
<i>Monongahela River.</i>						
Pittsburg, Pa.	22.0	7.1	30	2.2	13	4.9
<i>Savannah River.</i>						
Augusta, Ga.	32.6	13.5	8	6.5	30	7.0
<i>Willamette River.</i>						
Portland, Oregon	15.0	22.0	15	18.0	29, 30	4.0
<i>Susquehanna River.</i>						
Harrisburg, Pa.	17.0	3.7	1, 2	1.6	22, 23	2.1
<i>Alabama River.</i>						
Montgomery, Ala.	48.0	21.3	8	4.2	26	17.1
<i>James River.</i>						
Lynchburg, Va.	18.0	5.5	3, 4	0.7	30	4.8
<i>Sacramento River.</i>						
Red Bluff, Cal.	22.0	4.9	1	2.3	30	2.6
Sacramento, Cal.	25.0					
<i>Des Moines River.</i>						
Des Moines, Iowa	19.0	6.7	12	4.0	30	2.7

* For 29 days.

ATMOSPHERIC ELECTRICITY.

THUNDERSTORMS.

Description of the more severe thunderstorms reported for the month is given under "Local storms."

Thunderstorms were reported as follows: East of the Rocky Mountains they were reported in the greatest number of states, 33, on the 3d and 21st; in 32 on the 4th; in 31 on the 30th; in 20 to 30 on the 1st, 2d, 5th, 6th, 10th to 17th, 19th, 20th, 22d, and 25th to 29th; and in 10 to 19 on the 7th, 8th, 9th, 18th, 23d, and 24th.

East of the Rocky Mountains thunderstorms were reported on the greatest number of dates, 29, in Florida; on 20 to 28 in Colorado, Georgia, Illinois, Iowa, Kansas, Louisiana, Michigan, Missouri, New York, North Carolina, North Dakota, Ohio, Pennsylvania, South Carolina, South Dakota, Tennessee, Texas, Virginia, and West Virginia; and on 10 to 19 in Alabama, Arkansas, Connecticut, Indiana, Kentucky, Maryland,

Massachusetts, Minnesota, Mississippi, Nebraska, New Hampshire, Vermont, and Wisconsin. The only states in which thunderstorms were reported on less than 10 dates were New Jersey on 8 dates, the District of Columbia and Montana on 7, Oklahoma on 6, Rhode Island on 4, and Delaware on 3.

West of the Rocky Mountains thunderstorms were reported in Arizona on the 7th, 8th, 9th, 18th, 24th, 25th, 26th, and 30th; in California on the 21st; in Idaho on the 22d and 27th; in Nevada on the 12th and 13th; in New Mexico on the 7th, 12th, 17th, 18th, and 25th; in Oregon on the 6th, 11th, 21st, 22d, 24th, and 27th; in Utah on the 13th, 25th, and 26th; in Washington on the 3d, 5th, 6th, 10th, 18th, and 24th; and in Wyoming on the 4th, 5th, 14th, and 26th to 29th. There were no states or territories in which thunderstorms were not reported.

AURORAS.

Auroras were reported as follows: 2d, Glenwood, Nebr.

3d, Worcester, Mass.; Valley Junction, Wis. 4th, Addison, N. Y. 5th, Collegeville, Minn.; Hartlandt, Vt. 7th, Winthrop, Mass.; Saint Olaf, Minn.; Berlin Mills, N. H.; Trenton, N. J.; Big Prairie and Dupont, Ohio; Chelsea, Vt.; Raymond, Wis. 8th, Gold Hill, Colo.; Dupont, Ohio; Pepin, Wis. 9th, Falls Village, Conn.; Clear Lake, Minn.; Lancaster, N. H.; Turin, N. Y.; Larimore and Wild Rice, N. Dak.; Dupont, Ohio; Chelsea, Hartlandt, and Woodstock, Vt.; Pepin and Shawano, Wis. 10th, Berlin Mills, N. H.; Turin, N. Y.; Fort Buford, N. Dak.; Shawano, Wis. 11th, Wild Rice, N. Dak. 12th, Big Prairie, Ohio. 14th, Berlin Mills and Bethlehem, N. H.; Turin and Waverly, N. Y.; Big Prairie, Ohio; Chelsea, Vt. 15th, Mayville, N. Dak. 16th, Berlin Mills, N. H. 17th, Clinton, Iowa; Wild Rice,

N. Dak. 18th, Vevay, Ind.; Blue Hill Observatory, Concord, Winthrop, and Worcester, Mass.; Albion, Manistee, and Marquette, Mich.; Fergus Falls, Granite Falls, Saint Cloud, and Saint Olaf, Minn.; Grafton, N. H.; Gloversville, Oswego, Perry City, Turin, and Waverly, N. Y.; Forman, Larimore, Mayville, and Wild Rice, N. Dak.; Kimball and Webster, S. Dak.; Hartlandt, Strafford, and Vernon, Vt.; Ashland, Medford, Raymond, Shawano, Stevens Point, and Westfield, Wis. 19th, Vevay, Ind.; Fergus Falls, Minn.; Turin, N. Y.; Ashland, Medford, Oconomowoc, and Shawano, Wis. 21st, Beloit, Kans. 23d, Degonia Springs, Ind.; Clinton, Iowa; Waverly, N. Y. 26th, Fall River, Mass.; Big Prairie, Ohio. 27th, Big Prairie, Ohio. 29th, Cumberland (a), Md.; Chelsea, Vt.; Berlin Mills, N. H.

STATE WEATHER SERVICES.

[Temperature in degrees Fahrenheit; precipitation, including melted snow, in inches and hundredths.]

The following extracts and summaries are republished from reports for June, 1893, of the directors of the various state weather services:

ALABAMA.

Temperature.—The mean was 1.0 below the normal; maximum, 101, at Brewton, 26th and 27th; minimum, 50, at Healing Springs, 1st and 2d; greatest monthly range, 46, at Healing Springs; least monthly range, 25, at Citronelle and Newbern.

Precipitation.—The average was 0.04 below the normal; greatest monthly, 9.06, at Newburg; least monthly, 2.69, at Thomasville.

Wind.—Prevailing directions, south and southwest.—*P. H. Mell, Observer, Weather Bureau, Auburn, director.*

ARIZONA.

Temperature.—Maximum, 116, at Fort Mohave, 7th; minimum, 39, at Whipple Barracks, 5th and 14th; greatest monthly range, 60, at Buckeye and San Carlos; least monthly range, 30, at Saint Helena Ranch.

Precipitation.—Greatest monthly, 0.29, at Chiricahua Mountains; least monthly, 0.00, at 27 stations.

Wind.—Prevailing direction, southwest.—*W. Burrows, Observer, Weather Bureau, Tucson, director.*

ARKANSAS.

Temperature.—The mean was 0.6 below the normal; maximum, 99, at Hot Springs, 13th and 26th; minimum, 49, at Keesees Ferry, 8th, at Gainesville, Mo., 17th, and at Melbourne, 18th; greatest monthly range, 49, at Hot Springs; least monthly range, 32, at Mount Nebo, Osceola, Prescott, and Greenville, Miss.

Precipitation.—The average was 0.94 above the normal; greatest monthly, 10.24, at Camden; least monthly, 1.14, at Rogers.

Wind.—Prevailing direction, south.—*F. H. Clarke, Local Forecast Official, Weather Bureau, Little Rock, director.*

CALIFORNIA.

Temperature.—The mean was 3.8 below the normal; maximum, 110, at Needles, 6th and 7th; minimum, 25, at Fort Bidwell, 17th; greatest monthly range, 70, at San Ardo.

Precipitation.—The average was 0.28 below the normal; greatest monthly, 0.91, at Crescent City; least monthly, 0.00, over the greater portion of the state.—*J. A. Barwick, Observer, Weather Bureau, Sacramento, director.*

COLORADO.

Temperature.—The mean was 2.0 above the normal; maximum, 106, at Lamar, 23d; minimum, 9, at Pikes Peak, 4th.

Precipitation.—The average was about 0.75 below the normal; greatest monthly, 4.66, at Amherst; least monthly, 0.00, at a number of stations.

Wind.—Prevailing directions, south and west.—*J. J. Gilligan, Observer, Weather Bureau, Denver, director.*

FLORIDA.

Temperature.—Maximum, 104, at Micco, 23d; minimum, 60, at Orlando, 9th, 10th, and 11th; greatest monthly range, 34, at Micco and Orlando; least monthly range, 18, at Key West.

Precipitation.—Greatest monthly, 14.13, at Brooksville; least monthly, 2.32, at Saint Augustine.

Wind.—Prevailing direction, southeast.—*E. R. Demain, Observer, Weather Bureau, Jacksonville, director.*

GEORGIA.

Temperature.—Maximum, 100, at Americus, 12th and 17th, and at Cordele, 8th, 20th, 23d, and 25th; minimum, 52, at Diamond, 11th and 14th; greatest monthly range, 42, at Cordele, Lincolnton, and Thomasville; least monthly range, 22, at West Point.

Precipitation.—Greatest monthly, 13.25, at Darien; least monthly, 2.10, at Morgan.

Wind.—Prevailing direction, south.—*Park Morrill, Local Forecast Official, Weather Bureau, Atlanta, director.*

IDAHO.

Temperature.—Maximum, 97, at Payette, 30th; minimum, 20, at Lake, 5th, 6th, and 7th; greatest monthly range, 70, at Lake; least monthly range, 42, at Moscow.

Precipitation.—Greatest monthly, 0.86, at Delta; least monthly, 0.00, at Martin and American Falls.

Wind.—Prevailing direction, southwest.—*J. H. Smith, Observer, Weather Bureau, Idaho Falls, director.*

ILLINOIS.

Temperature.—The mean was 1.5 above the normal; maximum, 98, at Walnut, 18th; minimum, 42, at Fort Sheridan, 11th.

Precipitation.—The average was 1.38 below the normal; greatest monthly, 7.59, at Cairo; least monthly, 0.80, at Bloomington.

Wind.—Prevailing direction, southwest.—*John Craig, Observer, Weather Bureau, Springfield, director.*

INDIANA.

Temperature.—The mean was normal; maximum, 101, at Ashboro, 19th; minimum, 40, at Valparaiso, 1st and 2d; greatest monthly range, 54, at Union City; least monthly range, 28, at Huntingburg and New Albany.

Precipitation.—The average was 0.80 below the normal; greatest monthly, 7.15, at Huntingburg; least monthly, 0.20, at Valparaiso.

Wind.—Prevailing direction, southwest.—*Prof. H. A. Huston, Lafayette, director; C. F. R. Wappenhans, Local Forecast Official, Weather Bureau, assistant.*

IOWA WEATHER AND CROP SERVICE.

Temperature.—The mean was about 2.0 above the normal; maximum, 100, at Richland, 12th, and at Washington, 19th; minimum, 40, at Atlantic, 5th, and at Sibley, 6th; greatest monthly range, 55, at Atlantic; least monthly range, 31, at Fort Madison.

Precipitation.—The average was 1.00 below the normal; greatest monthly, 7.56, at Atlantic; least monthly, 1.36, at Rock Rapids.

Wind.—Prevailing direction, southeast.—*J. R. Sage, Des Moines, director; G. M. Chappel, Local Forecast Official, Weather Bureau, assistant.*

KANSAS.

Temperature.—The mean was 0.5 above the normal; maximum, 114, at Lakin, 20th; minimum, 31, at Manhattan, 5th; greatest monthly range, 79, at Lakin; least monthly range, 36, at Lawrence.

Precipitation.—The average was 0.38 above the normal; greatest monthly, 13.10, at Lebo; least monthly, 0.51, at Syracuse.

Wind.—Prevailing direction, south.—*T. B. Jennings, Observer, Weather Bureau, Topeka, director.*

KENTUCKY.

Temperature.—Maximum, 97, at Shelbyville, 19th; minimum, 48, at Harrodsburg, 8th, and at Paducah, 1st; greatest monthly range, 48, at Harrodsburg; least monthly range, 20, at South Fork.

Precipitation.—Greatest monthly, 9.30, at Munfordville; least monthly, 1.08, at Caddo.

Wind.—Prevailing direction, southwest.—*Frank Burke, Local Forecast Official, Weather Bureau, Louisville, director.*

LOUISIANA.

Temperature.—The mean was 1.2 below the normal; maximum, 100, at

Clinton and Liberty Hill, 26th, at Lafayette, 27th, and at Schriever, 30th; minimum, 55, at Oxford, 7th; greatest monthly range, 41, at Cameron; least monthly range, 22, at Donaldsonville.

Precipitation.—The average was 1.09 above the normal; greatest monthly, 11.39 at Paincourtville; least monthly, 1.79, at Girard.

Wind.—Prevailing direction, southeast.—*R. E. Kerkam, Local Forecast Official, Weather Bureau, New Orleans, director.*

MARYLAND.

Temperature.—The mean was 0.3 below the normal; maximum, 104, at Kirkwood, Del., 20th; minimum, 40, at Sunnyside, 8th; greatest monthly range, 51, at Sunnyside; least monthly range, 21, at Jewell.

Precipitation.—The average was 1.44 below the normal; greatest monthly, 5.00, at Fenby; least monthly, 0.72, at Barren Creek Springs.

Wind.—Prevailing direction, northeast.—*Dr. William B. Clark, Johns Hopkins University, Baltimore, director; Prof. Milton Whitney, Maryland Agricultural College, secretary and treasurer; C. P. Cronk, Observer, Weather Bureau, in charge.*

MICHIGAN.

Temperature.—The mean was 1.7 above the normal; maximum, 100, at Mio, 20th; minimum, 31, at Crystal Falls, 28th; greatest monthly range, 66, at Crystal Falls; least monthly range, 25, at Arbela.

Precipitation.—The average was 0.65 below the normal; greatest monthly, 7.19, at Lansing; least monthly, 0.28, at Montague.

Wind.—Prevailing direction, southwest.—*E. A. Evans, Local Forecast Official, Weather Bureau, Detroit, director.*

MINNESOTA.

Temperature.—Maximum, 102, at Crookston, 12th; minimum, 31, at Pokegama Falls, 9th; greatest monthly range, 65, at Pokegama Falls; least monthly range, 37, at Rolling Green.

Precipitation.—Greatest monthly, 5.20, at Saint Vincent; least monthly, 0.33, at Sandy Lake Dam.

Wind.—Prevailing direction, south.—*E. A. Beals, Observer, Weather Bureau, Minneapolis, director.*

MISSISSIPPI.

Temperature.—The mean was 0.9 below the normal; maximum, 101, at Crystal Springs, 26th; minimum, 48, at Corinth, 10th; greatest monthly range, 50, at Corinth; least monthly range, 25, at Hattiesburg.

Precipitation.—The average was 0.85 above the normal; greatest monthly, 9.18, at Biloxi; least monthly, 1.25, at Agricultural College.

Wind.—Prevailing direction, southeast.—*R. J. Hyatt, Local Forecast Official, Weather Bureau, Vicksburg, director.*

MISSOURI.

Temperature.—Maximum, 98, at Jefferson City, 18th, and at New Boston and Fayette, 21st; minimum, 42, at Unionville, 1st.

Precipitation.—Greatest monthly, 8.30, at Malden; least monthly, 1.29, at Canton.

Wind.—Prevailing direction, southeast.—*Miss Ida L. Crume, Secretary, State Board of Agriculture, Columbia, director; H. A. McNally, Observer, Weather Bureau, assistant.*

NEBRASKA.

Temperature.—Maximum, 105, at York, 20th; minimum, 33, at Fort Sidney, 3d; greatest monthly range, 68, at Forts Sidney and Robinson; least monthly range, 31, at Syracuse.

Precipitation.—Greatest monthly, 7.27, at Ashland; least monthly, 0.35, at Wayne.

Wind.—Prevailing direction, south.—*George E. Hunt, Local Forecast Official, Weather Bureau, Omaha, director.*

NEVADA.

Temperature.—The mean was 0.1 below the normal; maximum, 100, at Downeyville, 16th, and at Belleville, 1st; minimum, 21, at Stofiel, 14th; greatest monthly range, 68, at Monitor Ranch; least monthly range, 27, at Battle Mountain.

Precipitation.—Greatest monthly, 0.40, at Tuscarora; least monthly, 0.00, at a number of stations.

Wind.—Prevailing direction, south.—*Prof. Charles W. Friend, Carson City, director; F. A. Carpenter, Observer, Weather Bureau, assistant.*

NEW ENGLAND.

Temperature.—The mean was 0.3 below the normal; maximum, 99, at Woodstock, 15th; minimum, 34, at Fort Kent, 28th; greatest monthly range, 64, at Fort Kent; least monthly range, 32, at Woods Holl.

Precipitation.—The average was 0.60 below the normal; greatest monthly, 6.56, at South Dennis; least monthly, 0.99, at Fairfield.

Wind.—Prevailing directions, east and southwest.—*J. Warren Smith, Observer, Weather Bureau, Boston, director.*

NEW JERSEY.

Temperature.—The mean was 0.8 above the normal; maximum, 103, at Millville, Beverly, Imlaystown, and Elizabeth, 20th; minimum, 40, at Gillette, 29th; greatest monthly range, 58, at Gillette and Franklinville; least monthly range, 39, at Atlantic City.

Precipitation.—The average was 1.03 below the normal; greatest monthly, 7.02, at Dover; least monthly, 0.46, at Bridgetown.

Wind.—Prevailing direction, northeast.—*E. W. McGann, Observer, Weather Bureau, New Brunswick, director.*

NEW YORK.

Temperature.—The mean was 2.4 above the normal; maximum, 99, at West Point, 20th; minimum, 37, at South Kortright, 8th, and at Brookfield, 1st; greatest monthly range, 58, at Eden Center; least monthly range, 30, at Dunkirk.

Precipitation.—The average was 1.13 below the normal; greatest monthly, 5.76, at South Kortright; least monthly, 0.50, at Leroy.

Wind.—Prevailing directions, south and southwest.—*Prof. E. A. Fuertes, Dean of the College of Civil Engineering, Cornell University, Ithaca, director; R. M. Hardinge, Observer, Weather Bureau, assistant.*

NORTH CAROLINA.

Temperature.—The mean was 1.2 below the normal; maximum, 102, at Rockingham, 11th; minimum, 43, at Blowing Rock, 29th; greatest monthly range, 46, at Rockingham; least monthly range, 21, at Hatteras.

Precipitation.—The average was 1.46 above the normal; greatest monthly, 11.37, at Columbus; least monthly, 2.16, at Warrenton.

Wind.—Prevailing direction, southwest.—*Dr. Herbert B. Battle, Raleigh, director; C. F. von Herrmann, Observer, Weather Bureau, assistant.*

NORTH DAKOTA.

Temperature.—The mean was 3.8 above the normal; maximum, 103, at Kelso, 12th; minimum, 33, at Valley City, 5th; greatest monthly range, 69, at Valley City; least monthly range, 49, at Dunseith.

Precipitation.—The average was 0.15 below the normal; greatest monthly, 5.54, at Sykeston; least monthly, 0.86, at Medora.

Wind.—Prevailing direction, south.—*W. H. Fallon, Observer, Weather Bureau, Bismarck, director.*

OHIO WEATHER AND CROP SERVICE.

Temperature.—The mean was 0.7 above the normal; maximum, 102, at Greenfield, 19th; minimum, 40, at Green Hill, 7th, and at Logan, 8th; greatest monthly range, 56, at McLuney; least monthly range, 38, at Hiram.

Precipitation.—The average was 0.74 below the normal; greatest monthly, 7.45, at Logan; least monthly, 0.63, at Wellington.

Wind.—Prevailing direction, southwest.—*L. N. Bonham, Columbus, director; C. M. Strong, Observer, Weather Bureau, assistant.*

OKLAHOMA.

Temperature.—Maximum, 112, at Gate City, 23d; minimum, 45, at Purcell, 1st, at Buffalo, 10th, and at Cloud Chief, 16th.

Precipitation.—Greatest monthly, 3.84, at Lehigh; least monthly, 0.51, at Fort Sill.

Wind.—Prevailing direction, south.—*J. I. Widmeyer, Observer, Weather Bureau, Oklahoma City, director.*

OREGON.

The month was the coldest on record.

Temperature.—The mean was 3.2 below the normal; maximum, 95, at Grants Pass, 4th; minimum, 25, at Crook, 19th, and at Lakeview, 22d; greatest monthly range, 62, at Lakeview; least monthly range, 32, at Newport.

Precipitation.—The average was 0.77 below the normal; greatest monthly, 5.64, at Glenora; least monthly, trace, at Sparta, La Grande, and Burns.

Wind.—Prevailing direction, southwest.—*Hon. H. E. Hayes, Master State Grange, Portland, director; B. S. Pague, Local Forecast Official, Weather Bureau, assistant.*

PENNSYLVANIA.

Temperature.—The mean was 0.7 above the normal; maximum, 100, at Hamburg, Lock Haven, Carlisle, Aqueduct, and Blooming Grove, 20th; minimum, 38, at Drifton, 20th and 21st, and at Smethport, 20th; greatest monthly range, 56, at Drifton and Quakertown; least monthly range, 28, at Erie.

Precipitation.—The average was 1.14 below the normal; greatest monthly, 6.50, at Clarion; least monthly, 1.20, at Blooming Grove.

Wind.—Prevailing direction, west.—*Under direction of the Franklin Institute, Philadelphia; W. P. Tatham, director; H. L. Ball, Observer, Weather Bureau, assistant.*

SOUTH CAROLINA.

Temperature.—The mean was slightly above the normal; maximum, 96, at Youngs Island, 18th; minimum, 53, at Kitchings Mills, 10th.

Precipitation.—Greatest monthly, 16.30, at Charleston; least monthly, 2.32, at McCormick.

Wind.—Prevailing direction, southeast.—*J. H. Harmon, Observer, Weather Bureau, Columbia, director.*

SOUTH DAKOTA.

Temperature.—The mean was 4.3 above the normal; maximum, 110, at Oelrichs, 11th; minimum, 31, at Castlewood and Cross, 6th; greatest monthly range, 75, at Oelrichs; least monthly range, 44, at Wolsey.

Precipitation.—The average was 1.82 below the normal; greatest monthly, 3.15, at Cross; least monthly, 0.36, at Sioux Falls.

Wind.—Prevailing direction, south.—*S. W. Glenn, Local Forecast Official, Weather Bureau, Huron, director.*

TENNESSEE WEATHER AND CROP SERVICE.

Temperature.—The mean was 0.5 below the normal; maximum, 98, at Covington, 13th; minimum, 50, at Brownsville, 12th, 25th, 26th, and 28th; greatest monthly range, 47, at Covington; least monthly range, 24, at Byrdstown and Florence Station.

Precipitation.—The average was 0.81 below the normal; greatest monthly, 6.66, at Riddleton; least monthly, 1.80, at Brownsville.

Wind.—Prevailing direction, south.—*J. B. Marbury, Local Forecast Official, Weather Bureau, Nashville, director.*

TEXAS.

Temperature.—The mean was 0.5 below the normal; maximum, 112, at Fort Ringgold, 1st; minimum, 44, at Childress, 15th, and at Fort Hancock, 2d; greatest monthly range, 66, at Fort Hancock; least monthly range, 14, at Flower Bluff.

Precipitation.—The average was 0.29 below the normal; greatest monthly, 9.93, at Huntsville; least monthly, 0.00, at several stations.

Wind.—Prevailing direction, south.—*D. D. Bryan, Galveston, director; I. M. Cline, Local Forecast Official, Weather Bureau, assistant.*

UTAH.

Temperature.—Maximum, 105, at Saint George, 6th and 30th; minimum, 19, at Soldier Summit, 3d; greatest monthly range, 74, at Soldier Summit; least monthly range, 51, at Logan.

Precipitation.—Greatest monthly, 0.17, at Castle Gate; least monthly, 0.00, at a great number of stations.

Wind.—Prevailing direction, northwest.—*G. N. Salisbury, Observer, Weather Bureau, Salt Lake City, director.*

VIRGINIA.

Temperature.—Maximum, 100, at Nottoway, 19th; minimum, 45, at Dale Enterprise, 9th; greatest monthly range, 50, at Nottoway; least monthly range, 29, at Salem.

Precipitation.—Greatest monthly, 8.36, at Norfolk; least monthly range, 1.35, at Alexandria.

Wind.—Prevailing direction, southwest.—*Dr. E. A. Craighill, Lynchburg, director; J. N. Ryker, Observer, Weather Bureau, assistant.*

WASHINGTON.

Temperature.—The mean was 5.0 below the normal; maximum, 89, at Ferry, 4th, and at Tacoma, 5th; minimum, 30, at Davenport, 19th.

Precipitation.—Greatest monthly, 7.99, at Neah Bay; least monthly, 0.11, at Fort Simcoe.—*H. F. Alciatore, Observer, Weather Bureau, Olympia, director.*

WEST VIRGINIA.

Temperature.—Maximum, 99, at Morgantown, 20th; minimum, 40, at Davis, 8th and 24th; greatest monthly range, 53, at Morgantown; least monthly range, 35, at Weston.

Precipitation.—Greatest monthly, 6.41, at Bluefield; least monthly, 1.83, at Martinsburg.

Wind.—Prevailing direction, west.—*W. W. Dent, Observer, Weather Bureau, Parkersburg, director.*

WISCONSIN.

Temperature.—The mean was 3.0 above the normal; maximum, 100, at Crandon, 12th, and at Menomonie, 13th; minimum, 33, at Bayfield, 15th, and at Ashland, 11th.

Precipitation.—The average was about 2.00 below the normal; greatest monthly, 6.69, at Madison; least monthly, 0.89, at Oconto.

Wind.—Prevailing direction, southwest.—*W. L. Moore, Local Forecast Official, Weather Bureau, Milwaukee, director.*

WYOMING.

Temperature.—Maximum, 108, at Wheatland, 18th; minimum, 27, at Arland, 6th; greatest monthly range, 72, at Wheatland; least monthly range, 54, at Saratoga.

Precipitation.—Greatest monthly, 1.75, at Sundance; least monthly, 0.10, at Wheatland.—*E. M. Ravenscraft, Observer, Weather Bureau, Cheyenne, director.*

METEOROLOGICAL TABLES.

Meteorological record of voluntary and other co-operating observers, June, 1893.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean.			Max.	Min.	Mean.	
Alabama.					Arizona—Cont'd.				
Alco.....	96	60	78.2	0.00	Buckeye.....	115	55	83.4	0.00
Birmingham.....	92	64	77.6	3.70	Calabasas.....	106	53	79.6	0.00
Brewton.....	93	58	77.8	3.25	Casa Grande.....	110	75	94.7	0.00
Camden.....	101	60	79.8	3.45	Chiricahua Mts.....	105	50	80.7	0.00
Citronelle.....	92	70	77.3	3.68	Crittenden.....	105	50	80.7	0.00
Claiborne Landing.....	94	69	78.9	4.67	Dragon.....	101	70	87.4	0.00
Cordova.....	93	60	77.6	7.96	Dudleyville.....	108	57	83.9	0.00
Decatur.....	93	52	74.5	5.11	Eagle Pass.....	101	70	80.0	0.00
Demopolis.....	93	52	74.5	5.11	Florence.....	110	58	86.9	0.00
Eufaula.....	93	64	79.0	4.16	Fort Apache.....	96	42	71.4	0.00
Euclid.....	93	64	79.0	4.16	Fort Bowie.....	101	61	82.3	0.00
Florence.....	91	55	75.6	5.74	Fort Grant.....	102	54	82.0	0.00
Fort Deposit.....	93	60	77.8	4.39	Fort Huachuca.....	101	57	80.0	0.00
Gadsden.....	93	60	77.8	4.39	Fort Mohave.....	101	57	80.0	0.00
Geneva.....	93	60	77.8	4.39	Gila Bend.....	108	64	93.0	0.00
Greensboro.....	93	60	77.8	4.39	Gila Bend.....	116	78	95.1	0.00
Healing Springs.....	95	50	75.5	7.43	Holbrook.....	97	43	71.0	0.04
Highland Home.....	95	50	75.5	7.43	Maricopa.....	109	84	90.2	0.00
Livingston.....	95	50	75.5	7.43	Mount Huachuca.....	103	55	81.5	0.00
Lynn.....	91	56	75.5	5.34	Natural Bridge.....	100	58	82.1	0.00
Marion.....	94	61	77.6	5.04	Oracle.....	116	54	85.6	0.00
Maysville.....	97	63	78.2	5.46	Pantano.....	114	72	86.6	0.00
Mount Willing.....	93	63	78.2	5.46	Payson.....	109	61	86.5	0.00
Newbern.....	95	52	74.8	9.06	Peoria.....	114	59	85.1	0.00
Newburg.....	95	52	74.8	9.06	Phoenix.....	110	75	94.0	0.00
Opelika.....	95	52	74.8	9.06	Red Rock.....	100	59	83.3	0.00
Oxanna.....	95	52	74.8	9.06	Reymert.....	100	59	83.3	0.00
Pine Apple.....	97	58	78.4	3.57	Ryo.....	96	66	79.0	0.00
Pushmataha.....	93	65	77.6	3.20	St. Helena R'h.....	110	50	81.4	0.00
Selma.....	93	65	77.6	3.20	San Carlos.....	110	50	81.4	0.00
Sturdevant.....	93	65	77.6	3.20	Show Low.....	108	58	84.0	0.00
Talladega.....	93	65	77.6	3.20	Signal.....	108	58	84.0	0.00
Tallapoosa.....	93	65	77.6	3.20	Teviston.....	108	58	84.0	0.00
Tallapoosa Falls.....	93	65	77.6	3.20	Texas Hill.....	116	74	95.3	0.00
Tuscaloosa.....	93	65	77.6	3.20	Tucson.....	109	61	86.7	0.00
Tusculum.....	93	65	77.6	3.20	Tucson.....	106	80	92.9	0.00
Union Springs.....	93	65	77.6	3.20	Walnut Grove.....	99	60	78.7	0.00
Union Springs.....	93	65	77.6	3.20	Whipple Barracks.....	99	39	65.0	0.00
Valley Head.....	93	65	77.6	3.20	Willcox.....	106	55	83.9	0.00
Warrior.....	93	65	77.6	3.20	Yuma.....	107	70	88.9	0.00
Wilsonville.....	93	65	77.6	3.20					
Alaska.					Arkansas.				
Killisnoo.....	60	36	49.4	2.85	Arkadelphia.....	100	50	75.0	4.44
Metlakatla.....	68	34	52.0	2.30	Arkansas City.....	100	50	75.0	6.61
Arizona.					Ashdown.....	95	57	76.2	4.48
Antelope Valley.....	100	70	85.0	0.00	Bee Branch.....	95	54	75.6	5.30
Ariz. Can. Co. Dam.....	100	70	85.0	0.00	Brinkley.....	94	58	75.6	4.31
Benson.....	105	70	87.5	0.00	Camden.....	94	50	75.5	10.24
Blaine.....	99	55	80.1	0.00	Camden.....	94	50	75.5	10.24
					Conway.....	89	63	74.4	3.77

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean.			Max.	Min.	Mean.	
Arkansas—Cont'd.					California—Cont'd.				
Corning.....	93	55	74.8	3.84	Berkeley.....	91	46	61.0	0.00
Dallas.....	94	53	76.5	5.22	Bishop Creek.....	98	59	82.3	0.00
Dardanelle.....	94	50	72.7	8.84	Boca.....	85	35	56.1	0.00
Fayetteville.....	94	50	72.7	8.84	Borden.....	102	54	74.8	0.00
Forrest.....	94	50	72.7	7.00	Boulder Creek.....	99	40	61.5	0.00
Fulton.....	94	50	72.7	7.00	Brentwood.....	98	60	73.9	0.00
Hamburg.....	94	50	72.7	7.00	Brighton.....	99	58	76.1	0.00
Helena.....	97	58	77.7	5.88	Byron.....	100	50	68.3	0.00
Hot Springs.....	99	50	76.8	5.60	Caliente.....	102	57	82.0	0.00
Keesee Ferry.....	90	49	73.8	5.60	Calistoga.....	99	54	70.4	0.00
Kirby.....	93	55	75.4	6.80	Campo Seco.....	99	54	70.4	0.00
London.....	98	62	79.5	7.56	C. Mendocino L. H.....	99	54	70.4	0.00
Madding.....	98	62	79.5	7.56	Capitola.....	82	52	63.7	0.00
Malvern.....	92	54	74.8	3.18	Castroville.....	75	50	59.6	0.00
Marcella.....	99	59	79.0	5.28	Centerville.....	102	52	64.3	0.02
Melbourne.....	97	49	76.2	4.31	Chico.....	96	52	71.0	0.00
Mont Nebo.....	87	55	72.6	3.75	Chino.....	97	59	74.0	0.00
New Gascony.....	92	65	76.9	5.35	Cisco.....	70	32	47.5	T.
Newport.....	95	59	77.6	2.76	Citrus.....	102	52	74.0	0.00
Newport.....	94	58	75.2	2.49	Claremont.....	95	44	67.5	0.00
Ocala.....	92	60	75.1	6.10	Colfax.....	94	44	69.1	0.00
Ozark.....	96	57	77.4	4.39	Colton.....	100	55	74.0	0.00
Pine Bluff.....	96	57	77.4	4.39	Colusa.....	97	50	69.8	0.00
Prescott.....	91	59	76.1	4.40	Corning.....	104	54	74.9	0.00
Rison.....	95	59	77.8	4.60	Crescent City.....	99	54	74.9	0.00
Rogers.....	95	59	77.8	4.60	Crescent City L. H.....	99	54	74.9	1.25
Russellville.....	96	55	76.8	3.35	Crofton.....	100	60	78.2	0.00
Searcy.....	95	58	76.0	5.76	Davisville.....	100	59	76.3	0.00
Stuttgart.....	93	58	76.8	7.53	Davisville.....	95	50	70.8	0.00
Texarkana.....	94	54	78.8	5.21	Delano.....	97	60	78.0	0.00
Warm Springs.....	95	63	76.7	2.83	Downey.....	90	58	68.7	0.00
Washington.....	91	59	77.2	7.10	Drytown.....	96	43	67.2	0.00
Wiggo.....	91	59	77.2	7.10	Duarte.....	98	52	71.1	0.05
Winslow.....	83	59	72.0	6.67	Dunnigan.....	98	64	80.2	0.00
California.					Dunsmuir.....	91	45	63.0	0.00
Agnew.....	96	42	61.8	0.00	East Brother L. H.....	99	54	74.9	0.00
Alcalde.....	103	58	79.0	0.00	Edgewood.....	80	47	62.2	0.30
Anaheim.....	92	50	67.8	0.00	Edmonton.....	84	35	54.8	0.16
Anderson.....	99	56	72.3	0.00	El Casco.....	105	58	78.3	0.00
Antioch.....	98	58	72.1	0.00	Elmira.....	102	48	72.5	0.00
Aptos.....	75	49	59.5	0.00	El Verano.....	95	55	69.2	0.00
Araca.....	80	39	55.8	0.15	Emigrant Gap.....	79	44	62.2	0.00
Arlington Heights.....	100	46	70.2	0.04	Esparto.....	102	60	79.2	0.00
Athlone.....	98	54	73.8	0.00	Evergreen.....	100	50	70.0	0.00
Auburn.....	95	53	71.0	0.00	Exeter.....	96	64	77.2	0.00
Bakersfield.....	102	65	79.4	0.00	Fall Brook.....	92	51	65.2	0.00
Ballast Point L. H.....	104	45	71.8	0.00	Farmington.....	100	54	76.8	0.00
Barstow.....	105	40	78.2	0.00	Felton.....	104	34	62.3	0.00
Beaumont.....	97	54	74.8	0.00	Fernando.....	100	47	68.0	0.00
Belmont.....	90	49	64.7	0.00	Florence.....	83	58	68.1	0.00
Berendo.....	100	65	86.6	0.00	Florin.....	101	45	66.6	0.00

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
California—Cont'd.	°	°	°	Ins.	California—Cont'd.	°	°	°	Ins.
French Corral.....	93	48	69.5	0.00	Pomona.....	100	45	71.2	0.00
Fresno *.....	101	57	76.6	0.00	Porterville *.....	104	62	81.0	0.00
Fruto *.....	100	60	76.6	0.00	Poway *.....	97	58	70.4	0.00
Galt *.....	100	62	72.7	0.00	Ravenna *.....	99	58	73.1	0.00
Georgetown *.....	92	40	66.8	0.00	Red Bluff *.....	102	64	79.7	0.00
Gilroy *.....	98	50	66.9	0.00	Redding *.....	102	58	77.3	0.00
Girard *.....	91	55	67.0	0.00	Redding *.....	100	54	72.0	0.00
Glen Ellen *.....	100	55	69.6	0.00	Redlands *.....	96	56	73.1	0.00
Goshen *.....	102	50	75.8	0.00	Represa *.....	93	51	70.6	0.00
Grass Valley *.....	104	58	73.6	0.00	Rio Vista *.....	100	48	69.4	0.00
Gridley *.....	88	55	63.4	0.00	Riverside *.....	104	46	70.8	0.00
Haywards *.....	96	45	64.3	0.00	Rocklin *.....	100	57	74.4	0.00
Hollister *.....	90	52	66.2	0.00	Roe Island L. H.	105	63	79.1	0.00
Hornbrook *.....	100	58	77.9	0.00	Rumsey *.....	88	42	64.8	0.00
Humboldt L. H.	89	34	54.6	0.32	Sacramento *.....	93	52	70.0	0.00
Huron *.....	96	47	73.6	0.00	Sacramento *.....	86	58	70.6	0.00
Hydesville *.....	112	70	91.9	0.00	Salinas *.....	75	55	64.6	0.00
Independence *.....	97	58	71.5	0.00	Salton *.....	118	79	95.9	0.00
Indio *.....	91	51	68.1	0.00	San Ardo *.....	105	47	64.2	0.00
Iowa Hill *.....	93	42	61.6	0.00	San Ardo *.....	105	35	64.8	0.00
Irvington *.....	89	38	65.0	0.00	San Bernardino *.....	98	46	71.0	0.00
Jackson *.....	96	43	68.8	0.00	San Gabriel *.....	96	58	73.1	0.00
Joan *.....	92	58	77.6	0.00	Sanger Junction *.....	108	52	78.8	0.00
Keeler *.....	94	52	69.8	0.00	San Jacinto *.....	102	38	70.0	0.00
Keene *.....	96	42	65.0	0.00	San Jose *.....	94	51	61.1	0.00
Kennedy Gold Mine *.....	102	48	61.5	0.00	San Jose *.....	92	33	58.9	0.00
King City *.....	105	60	80.4	0.00	San Luis L. H.	94	55	65.3	0.00
Kingsburg *.....	95	64	79.0	0.00	San Luis Obispo *.....	99	53	70.3	0.00
Knights Landing *.....	105	49	72.9	0.00	San Miguel *.....	83	60	68.8	0.00
Lagrange *.....	95	57	72.9	0.00	San Pedro *.....	80	49	62.2	0.00
Lathrop *.....	104	56	77.8	0.00	Santa Ana *.....	86	59	68.2	0.00
Laurel *.....	78	33	58.8	0.16	Santa Barbara *.....	92	45	60.5	0.02
Lemoore *.....	97	50	64.3	0.00	Santa Barbara *.....	83	43	57.9	0.00
Lick Observatory *.....	105	58	78.4	0.00	Santa Clara *.....	87	42	60.5	0.00
Lime Point L. H.	96	46	68.1	0.00	Santa Cruz *.....	98	43	66.0	0.00
Livermore *.....	84	54	65.9	0.00	Santa Cruz *.....	85	41	59.2	0.00
Livingston *.....	99	54	71.3	0.00	Santa Cruz *.....	82	58	68.6	0.00
Lodi *.....	95	40	69.0	0.00	Santa Maria *.....	92	50	65.9	0.00
Long Beach *.....	99	52	69.3	0.00	Santa Monica *.....	94	50	67.2	0.00
Los Angeles *.....	90	41	60.6	0.00	Santa Paula *.....	102	60	78.7	0.00
Los Banos *.....	112	75	97.1	0.00	Santa Rosa *.....	92	35	60.8	0.17
Los Gatos *.....	95	53	72.3	0.00	Shasta *.....	90	49	70.7	0.00
Mammoth Tank *.....	104	52	76.4	0.00	Shingle Springs *.....	91	43	63.1	0.00
Mare Island L. H.	96	48	63.1	0.00	Sims *.....	86	42	60.6	0.03
Marysville *.....	100	53	73.0	0.00	Sisson *.....	98	50	62.9	0.00
Merced *.....	100	50	68.2	0.00	Soledad *.....	92	46	59.8	0.00
Middletown *.....	100	53	77.5	0.00	Sonoma *.....	99	53	70.8	0.00
Modesto *.....	100	55	76.6	0.00	Spadra *.....	95	50	68.4	0.00
Mohave *.....	100	55	70.1	0.00	Stockton *.....	96	59	80.7	0.00
Mokelumne Hill *.....	100	58	81.3	0.00	Stockton *.....	72	39	55.0	0.00
Monson *.....	70	50	56.9	0.00	Summit *.....	95	55	68.2	0.00
Monterey *.....	85	50	59.7	0.00	Suisun City *.....	88	48	69.1	0.00
Monterey (Hotel del Monte) *.....	99	56	75.5	0.00	Susanville *.....	86	47	62.9	0.00
Mount Glenwood *.....	97	50	66.0	0.00	Tehachapi *.....	103	53	71.7	0.00
Napa City *.....	90	47	64.9	0.00	Tehama *.....	87	52	65.3	0.00
Napa City *.....	83	51	64.2	0.00	Templeton *.....	98	54	77.0	0.00
National City *.....	110	64	88.9	0.00	Towles *.....	102	55	79.2	0.00
Needles *.....	88	37	60.9	0.00	Tracy *.....	92	56	66.8	0.00
Needles *.....	95	54	69.7	0.00	Trinidad L. H.	80	38	57.0	0.00
Nevada City *.....	100	51	73.3	0.00	Truckee *.....	101	62	77.9	0.00
Newark *.....	102	55	73.9	0.00	Tulare *.....	98	60	79.0	0.00
Newcastle *.....	102	65	79.4	0.00	Turlock *.....	94	50	66.3	0.00
Newhall *.....	91	44	64.9	0.00	Turlock *.....	94	40	62.3	0.00
Niles *.....	98	41	66.0	0.00	Ukiah *.....	96	41	65.0	0.00
Nordhoff *.....	92	54	69.1	0.00	Upper Lake *.....	102	55	71.2	0.00
Norwalk *.....	102	52	71.2	0.00	Vacaville *.....	102	55	72.8	0.00
Oakdale *.....	91	47	62.3	0.00	Valley Springs *.....	95	60	75.5	0.00
Oakland *.....	80	52	63.6	0.00	Ventura *.....	80	47	62.6	0.00
Ogilby *.....	118	80	100.2	0.00	Vina *.....	101	55	76.7	0.00
Ontario *.....	98	50	73.8	0.00	Volcano Springs *.....	121	85	104.8	0.00
Orangevale *.....	107	49	72.8	0.00	Walnut Creek *.....	102	42	66.9	0.00
Orland *.....	110	60	77.7	0.00	Westley *.....	99	63	76.7	0.00
Oroville *.....	98	58	75.6	0.00	Whittier *.....	101	49	71.6	0.00
Oroville *.....	97	59	77.3	0.00	Williams *.....	93	59	76.0	0.00
Palermo *.....	103	47	73.0	0.00	Willows *.....	99	60	76.3	0.00
Palm Springs *.....	112	60	94.6	0.00	Willows *.....	99	49	71.2	0.00
Pasadena *.....	91	46	62.6	0.06	Winchester *.....	105	41	72.5	0.00
Paso Robles *.....	102	49	70.7	0.00	Winters *.....	100	60	80.3	0.00
Petaluma *.....	98	54	64.2	0.00	Woodland *.....	97	53	72.5	0.00
Piedras Blancas *.....	94	50	66.2	0.00	Yerba Buena L. H.	93	36	61.1	0.32
Pigeon Point L. H.	95	40	64.9	0.00	Yuba City *.....	96	64	79.4	0.00
Placerville *.....	102	54	66.8	0.00	Colorado.....	°	°	°	°
Pleasanton *.....	101	40	62.8	0.00	Abbott *.....	98	37	70.6	0.55
Pt. Año Nuevo L. H. ....	.....	.....	.....	0.05	Akron *.....	78	16	48.7	1.25
Pt. Arena L. H. ....	.....	.....	.....	0.00	Alma *.....	.....	.....	.....	0.22
Pt. Conception L. H. ....	.....	.....	.....	0.00	Amherst *.....	.....	.....	.....	4.66
Pt. Fermin L. H. ....	.....	.....	.....	0.00	Arboles *.....	.....	.....	.....	0.64
Pt. Hueneeme L. H. ....	.....	.....	.....	0.01	Breckenridge *.....	84	12	49.4	0.22
Pt. Lobos *.....	75	44	53.8	0.00	Brush *.....	104	37	70.2	1.13
Pt. Montara L. H. ....	.....	.....	.....	0.00	Byers *.....	100	43	77.0	0.00
Pt. Reyes L. H. ....	.....	.....	.....	0.08	Canyon *.....	98	36	69.1	0.03
Pt. Sur L. H. ....	.....	.....	.....	0.00					

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Colorado—Cont'd.</i>					<i>Florida—Cont'd.</i>				
Castle Rock†	93	31	65.6	0.36	Chattahoochee Landing†	.....	.....	.....	6.87
Cheyenne Wells*†	106	48	67.8	1.75	Clermont†	96	69	79.7	8.74
Chivington†	.....	.....	.....	2.28	Eustis†	95	67	79.0	7.47
Collbran	.....	.....	.....	0.41	Federal Point†	93	65	78.6	6.28
Copo (near)†	76	15	53.2	0.20	Fort Meade†	91	69	79.0	13.12
Cope†	99	37	71.0	1.79	Gainesville†	99	67	81.4	11.00
Cumbea†	74	20	50.6	0.00	Grasmere	91	66	79.0	.....
Deer Trail*†	92	50	74.5	0.30	Green Cove Spgs†	96	68	80.2	5.11
Delta†	100	32	67.8	0.00	Homeland†	93	64	76.9	10.16
Downing†	97	34	73.8	0.26	Hypoluxo*†	92	70	78.5	9.00
Dumont	88	28	60.0	0.40	Kissimmee†	95	67	81.1	12.47
East Dale	.....	.....	.....	0.00	Lake City†	93	71	81.0	10.82
First View*†	102	.....	71.2	2.08	Manatee†	94	67	79.0	11.20
Fort Collins†	95	31	65.3	0.26	Merritts Island†	92	70	81.0	7.67
Fort Collins (near)†	.....	.....	.....	0.36	Moseley Hall†	96	68	80.2	3.49
Fruit†	100	37	73.2	0.43	Mullet Key†	100	68	82.4	8.69
Garnett	.....	.....	.....	T.	Myers†	91	70	78.0	10.11
Glen Eyrie†	91	33	65.2	0.87	New Smyrna†	93	66	78.0	7.11
Gold Hill	89	30	64.2	1.50	Ocala*†	93	70	78.9	6.65
Grand Junction†	97	42	72.6	0.09	Orlando†	94	60	76.5	8.90
Greenhorn†	90	33	65.3	T.	Oxford*†	91	68	78.9	9.32
Hugo*†	98	40	70.2	1.75	Plant City†	96	66	79.9	9.89
Hugo (near)†	95	35	65.8	0.70	St. Andrews Bay†	97	66	82.8	7.36
Husted†	97	33	64.9	0.63	Saint Francis B'ks	94	69	78.6	2.32
Idaho Springs†	85	30	59.0	0.44	St. Petersburg†	96	70	81.2	8.99
Julesburg†	101	40	71.5	2.30	Tallahassee†	90	63	77.7	3.95
Kirk	.....	.....	.....	0.15	Tarpon Springs†	93	70	81.1	10.72
La Jara†	90	32	64.0	0.00	<i>Georgia.....</i>	.....	.....	.....	.....
Lamar†	106	40	76.6	1.40	Adairville†	92	56	74.4	5.74
La Porte	.....	.....	.....	0.41	Alapaha†	96	57	78.8	9.26
Las Animas†	102	40	72.0	1.84	Albany†	96 ^d	62 ^d	80.8 ^d	3.06
Lavender†	85	24	59.5	T.	Americus†	100	61	81.4	3.44
Lay*†	90	35	62.1	0.06	Athens ^a †	88	57	74.7	5.67
Leslie	.....	.....	.....	2.72	Athens ^b †	93	56	76.0	4.53
Livermore	90	33	63.8	0.63	Bainbridge ^a †	98	62	81.4	6.29
McCoy†	.....	.....	.....	0.97	Bainbridge ^b†	.....	.....	.....	6.43
Middle Box Elder	.....	.....	.....	0.40	Blakely*† ^b	95	63	79.6	3.23
Minneapolis†	105	35	73.6	0.70	Brant†	95	58	77.7	9.09
Monte Vista ^b	86	28	60.6	0.00	Camak†	94	56	77.2	5.47
Moraine†	82	25	56.6	0.37	Canton†	.....	.....	.....	6.39
Murray*†	85	42	66.8	0.09	Columbus†	92 ^d	63 ^d	78.5 ^d	6.56
Pagoda (near)†	89	25	58.9	0.30	Cordele† ^b	100	58	81.3	2.85
Parachute†	93	34	66.8	0.11	Dahlonega†	90	55	71.4	6.05
Red Cliff	.....	.....	.....	0.44	Darien†	96	62	80.1	13.25
Rico	.....	.....	.....	0.03	Diamond†	91	52	71.4	6.88
River Bend* ^b	98	50	77.7	3.40	Dublin†	94	54	80.6	4.75
Rocky Ford†	102	41	73.5	0.40	Eastman†	96	56	78.4	7.59
San Luis†	88	23	60.0	0.00	Elberton†	90	62	75.7	7.81
Scissors†	.....	.....	.....	T.	Fleming†	97	59	75.9	9.48
Sedgwick†	.....	.....	.....	3.44	Forysth*†	91	65	77.6	6.79
Seibert†	.....	.....	.....	2.27	Fort Gaines†	94	62	78.2	3.96
Sheridan Lake†	.....	.....	.....	2.08	Gainesville†	94	56	75.0	4.54
Smoky Hill Mine†	89	29	60.2	0.70	Gillsville*†	92	62	73.5	5.91
Springfield	.....	.....	.....	1.23	Griffin	95	51	73.9	5.42
Stamford*†	80	24	51.2	0.90	Hawkinsville†	93	45	77.8	8.55
Steamboat Spring†	91	23	56.4	T.	Heppizibah*† ^b	92	69	77.0	7.04
Sunnyside	82	22	55.5	0.76	Homerville†	96	62	78.6	9.02
Surface Creek†	95	31	68.0	T.	Lagrange*†	90	59	74.4	5.53
Table Rock	90	31	61.4	1.86	Lincolnton†	96 ^d	54 ^d	77.0 ^d	6.93
Thon†	102	31	67.6	0.44	Louisville†	94	57	76.5	7.32
Twin Lakes	.....	.....	.....	0.55	Lumpkin†	91	62	77.4	9.81
Vilas	.....	.....	.....	0.63	McArthur†	97	62	79.6	8.19
Wallet†	.....	.....	.....	1.95	Macon ^b†	.....	.....	.....	3.84
Watkins*†	100	30	75.4	1.00	Marietta†	88	56	72.1	4.85
Wilke†	.....	.....	.....	0.93	Marshallville†	91	60	76.2	5.89
Yuma	.....	.....	.....	1.30	Milledgeville†	92	58	75.4	4.00
Zuck	.....	.....	.....	1.40	Millen†	96	57	77.9	5.45
<i>Connecticut.</i>					Monticello*†	90	66	78.0	3.15
Canton	90	46	67.0	5.00	Morgan†	93	.....	.....	2.10
Colchester	95	45	66.0	1.90	Mount Vernon†	.....	.....	.....	6.31
Falls Village	.....	.....	.....	2.49	Newnan	92	57	74.9	7.97
Hartford ^b	.....	.....	.....	2.66	Point Peter*†	90	58	73.6	5.75
Hartford ^c	94	50	67.6	.....	Poultan†	95	57	77.6	6.40
Lake Konomoc	.....	.....	.....	2.63	Quitman ^b †	96	62	79.7	7.76
Lebanon	.....	.....	.....	2.17	Resaca†	.....	.....	.....	5.22
Middletown	96	46	67.2	2.99	Reynolds†	.....	.....	.....	5.86
New Hartford ^a *†	89	48	65.0	1.99	Rome†	88	58	72.7	5.82
New Hartford ^b	.....	.....	.....	2.09	Talbotton†	90	60	75.6	5.88
North Franklin	.....	.....	.....	3.73	Thomasville†	97	55	79.4	8.84
N. Grosvenor Dale†	90	43	65.2	1.75	Toccoa†	90	54	72.8	5.55
Norwalk ^b	96	47	67.2	2.10	Union Point†	91	59	75.6	3.21
South Manchester	.....	.....	.....	3.01	Washington†	90	64	76.9	6.79
Stevenson	.....	.....	.....	2.64	Way Cross†	93	62	79.8	5.53
Storrs†	91	45	64.2	1.98	Waynesboro†	95	57	77.5	6.82
Thompson†	88	46	63.5	.....	West Point†	90	68	79.6	5.93
Voluntown†	93 ^d	45 ^d	62.9 ^d	2.57	Whitesburg†	.....	.....	.....	5.21
Wallingford†	.....	.....	.....	2.35	<i>Idaho.</i>	.....	.....	.....	.....
Waterbury	94	49	67.3	1.82	American Falls†	92	29	59.8	0.00
West Simsbury	.....	.....	.....	3.52	Boise Barracks	93	37	62.7	T.
<i>Delaware.</i>					Bonanza City†	75	22	48.1	0.21
Dover†	96	51	70.8	1.20	Delta†	85	29	53.2	0.86
Kirkwood* ^b	104	.....	72.0	.....	Fort Sherman	80	32	55.0	0.75
Milford†	95	55	72.3	1.69	Martin†	81	28	52.8	0.00
Millsboro ¹	97	47	71.0	2.23	Moscow*†	76	34	57.6	0.60
Seaford†	97	52	71.6	0.77	Paris†	87	34	58.2	0.23
<i>District of Columbia.</i>					Payette†	97	36	64.1	0.09
Dist'ing Reserv'r* ^b	92	60	73.2	1.68	<i>Illinois.</i>	.....	.....	.....	.....
Rec'ing Reserv'r* ^b	91	60	73.2	1.68	Alton†	.....	.....	.....	3.27
West Washington ¹	98	53	74.6	1.95	Aurora ^a †	94	44	70.6	3.05
<i>Florida.</i>					Aurora ^b *†	92	49	70.8	3.64
Amelia†	94	70	80.0	6.10	Beardstown†	.....	.....	.....	3.34
Avon Park*†	92	70	80.2	13.49	Bloomington†	.....	.....	.....	0.80
Bristol†	98	66	82.6	5.61	Bushnell†	97	52	73.3	2.15
Brooksville	93	69	78.9	14.19	Carlinville†	92	51	73.0	4.10

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
Illinois—Cont'd.	°	°	°	Ins.	Iowa—Cont'd.	°	°	°	Ins.
Carlyle.....	91	53	73.2	5.62	Ames b.....	90	47	69.7	4.90
Cherokee.....	91	53	73.2	2.26	Ames c.....	90	47	69.7	4.90
Collinsville.....	91	53	73.2	2.26	Atlantic f.....	94	50	72.7	4.70
Dixon.....	94	45	69.7	4.42	Andover.....	95	40	70.1	4.70
Dubuque.....	95	60	73.1	3.62	Belle Plaine.....	92	44	71.6	4.93
East Peoria.....	92	47	71.3	4.29	Blakeville.....	91	47	71.2	3.43
Fort Sheridan.....	84	42	65.8	3.62	Bonaparte.....	93	54	71.8	3.30
Galva.....	95	49	72.3	1.37	Carroll.....	95	49	70.3	4.27
Golconda.....	95	49	72.3	1.37	Cedar Falls.....	92	44	72.2	3.64
Greenfield.....	94	52	72.4	5.16	Cedar Rapids.....	91	47	70.2	3.15
Griggsville.....	92	50	72.4	3.80	Centerville.....	90	52	72.2	4.89
Havana.....	93	55	74.0	2.00	Charles City.....	94	48	72.2	3.05
Hennepin.....	94	52	73.2	2.95	Clarinda.....	90	44	72.0	2.71
Herrins Prairie.....	92	50	75.2	4.45	Clinton.....	88	52	71.7	4.12
Jordan Grove.....	91	53	72.6	4.14	College Springs.....	92	49	71.9	4.37
Kankakee.....	85	30	69.8	1.26	Corning.....	87	47	69.4	3.82
Lagrange.....	91	47	69.5	1.74	Cresco.....	89	45	69.9	4.14
Liberty.....	88	34	70.6	1.74	Delaware.....	92	55	71.4	3.05
McLeansboro.....	96	32	72.2	4.54	Denison.....	87	50	71.4	3.05
Martinsville.....	90	51	71.3	3.15	Eagle Grove.....	94	46	70.4	2.92
Mascoutah.....	92	51	71.3	2.80	Elkader.....	94	46	70.4	2.92
Mattoon.....	94	56	72.1	2.00	Emmetsburg.....	93	44	69.6	1.73
Mount Carmel.....	93	53	72.7	3.41	Etherville.....	91	48	72.2	1.77
Mount Pleasant.....	90	50	72.7	5.00	Fort Madison.....	92	60	75.6	2.67
Muddy Valley.....	93	53	72.7	3.41	Grand Meadow.....	92	54	68.8	3.80
Olney.....	92	52	75.4	3.38	Greenfield.....	90	46	71.2	3.08
Olney.....	92	52	75.4	3.38	Hampton.....	93	45	68.9	3.07
Oregon.....	96	37	76.9	3.72	Hawkeye.....	93	45	68.9	3.07
Ottawa.....	91	37	68.7	3.27	Hopewell.....	88	48	69.8	4.05
Palatine.....	94	46	72.2	3.49	Humboldt.....	91	52	71.0	5.43
Paris.....	93	49	72.4	4.24	Independence.....	91	47	69.3	3.57
Peoria.....	95	55	75.7	1.82	Indianapolis.....	89	48	70.4	0.87
Peoria.....	89	48	71.2	1.67	Iowa City.....	99	45	71.4	3.01
Quincy.....	95	58	70.8	1.11	Iowa City.....	99	45	71.4	3.01
Rantoul.....	89	49	67.9	5.13	Jefferson.....	89	45	69.4	2.79
Riley.....	89	49	67.9	5.13	Keosauqua.....	92	47	71.5	4.40
Rushville.....	96	52	75.3	3.03	Knoxville.....	91	51	72.5	4.63
Saint John.....	92	62	74.6	4.60	Larrabee.....	93	53	71.2	2.19
Shawneetown.....	93	46	73.0	0.96	Le Claire.....	93	50	71.8	3.97
Shelbyville.....	95	46	73.0	0.96	Logan.....	93	50	71.8	3.97
Sycamore.....	86	35	68.7	5.04	Marshall.....	87	49	70.6	4.64
Tuscola.....	87	37	74.3	0.95	Mason City.....	93	53	70.4	5.41
Walnut.....	99	51	73.4	4.34	Maxon.....	93	54	73.4	2.86
Warsaw.....	91	35	71.3	1.35	Mechanicsville.....	90	47	69.3	5.82
Watseka.....	92	57	72.0	5.08	Monticello.....	93	49	70.5	5.82
White Hall.....	92	57	72.0	5.08	Mount Ayr.....	91	50	71.9	4.14
Winnebago.....	89	47	69.2	3.26	Mount Pleasant.....	89	47	71.4	4.12
Indiana.					Mount Vernon.....	94	54	73.0	4.30
Angola.....	96	52	70.8	4.12	Murray.....	93	49	70.4	5.37
Ashboro.....	91	51	69.8	3.86	Muscatine.....	92	49	71.3	3.61
Bedford.....	97	50	73.2	4.01	Newton.....	95	48	72.0	3.65
Butler.....	93	47	71.2	4.42	Oakaloosa.....	91	48	70.8	4.87
Cambridge City.....	90	48	69.8	3.38	Ovid.....	93	48	70.0	4.31
Columbia City.....	95	50	69.5	2.41	Panama.....	88	45	69.6	4.44
Columbus.....	93	62	71.4	2.10	Richland.....	100	53	71.4	3.53
Connersville.....	90	50	70.2	3.87	Rock Rapids.....	95	43	70.7	1.36
Degonia Springs.....	90	36	74.0	3.57	Sac City.....	89	54	70.3	5.20
Delphi.....	92	44	68.8	2.12	Seymour.....	95	47	70.6	5.06
Evansville.....	89	47	70.4	2.83	Sibley.....	90	40	69.1	2.48
Farmland.....	90	40	72.0	3.05	Storm Lake.....	92	53	72.4	3.34
Franklin.....	92	40	71.8	2.30	Union Lake.....	95	48	71.4	2.18
Hammond.....	92	40	71.8	2.30	Vinton.....	90	50	73.1	3.80
Hawthorne.....	88	45	68.7	3.76	Washington.....	90	53	70.4	3.19
Huntingburg.....	88	45	68.7	3.76	Webster City.....	100	50	70.5	3.83
Jeffersonville.....	93	52	74.4	4.68	Williams.....	92	52	70.5	3.83
Kokomo.....	98	47	73.6	1.48	Winterset.....	92	48	70.9	5.86
Lafayette.....	92	37	74.1	4.97	Kansas.				
Lafayette.....	95	46	71.6	1.93	Abilene.....	99	51	75.3	9.80
Logansport.....	93	49	72.2	2.17	Allison.....	104	45	75.4	1.68
Madison.....	91	61	75.8	4.47	Altoona.....	90	58	74.6	4.25
Madison.....	91	61	75.8	4.47	Atchison.....	93	53	73.5	0.25
Marengo.....	94	58	73.1	6.30	Beloit.....	104	46	74.3	4.94
Marion.....	92	48	72.0	2.28	Bucklin.....	99	55	75.4	0.85
Mauzy.....	91	48	71.1	3.67	Buffalo Park.....	99	55	75.4	0.85
Mount Vernon.....	92	53	74.1	3.70	Cawker City.....	100	41	72.8	1.69
Muncie.....	91	66	77.0	1.15	Colby.....	103	41	72.8	1.69
New Albany.....	88	60	74.0	4.52	Coldwater.....	110	45	76.6	1.80
Princeton.....	96	54	74.3	4.73	Collyer.....	96	60	76.0	1.80
Rockville.....	93	49	71.6	4.12	Columbus.....	94	49	73.6	3.35
Rushville.....	93	54	72.8	2.96	Cunningham.....	107	48	76.0	2.09
Seymour.....	93	54	72.8	2.96	Downs.....	105	49	74.6	3.38
Shelbyville.....	91	53	72.2	4.30	Eldorado.....	97	58	74.8	3.33
Terre Haute.....	96	43	68.6	4.38	Elk City.....	97	58	74.8	3.33
Union City.....	90	40	68.6	4.38	Ellis.....	110	46	75.4	0.85
Valparaiso.....	90	40	68.6	4.38	Englewood.....	113	49	76.2	1.78
Vevay.....	94	48	73.5	6.65	Eureka Ranch.....	111	41	76.5	3.84
Vincennes.....	90	51	71.8	3.93	Fort Riley.....	96	51	73.4	6.40
Worthington.....	90	51	71.8	3.93	Gove City.....	108	53	77.2	2.12
Indian Territory.					Grainfield.....	105	48	74.2	1.50
Colbert.....	111	46	76.6	0.74	Greensburg.....	106	49	74.9	0.87
Fort Supply.....	95	52	74.8	3.39	Grenola.....	108	53	74.7	3.58
Gwendolyn.....	103	55	79.6	2.73	Grinnell.....	108	60	79.3	0.87
Kemp.....	96	53	77.2	3.84	Halstead.....	96	48	72.5	3.72
Lehigh.....	105	45	79.0	1.30	Havensville.....	96	46	72.8	7.82
Parcell.....	105	45	79.0	1.30	Hays City.....	100	42	71.8	3.55
Tulsa.....	93	48	71.2	4.28	Horton.....	95	51	73.0	4.33
Iowa.					Hutchinson.....	100	49	74.6	3.86
Algona.....	91	56	71.2	1.60	Independence.....	100	53	73.9	3.93
Alta.....	90	44	70.8	5.48	Kansas City.....	91	49	72.1	7.30
Amana.....	93	48	71.2	4.28	Kellogg.....	110	50	76.0	4.39

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
Kansas—Cont'd.					Louisiana—Cont'd.				
Kiowa†	111	46	78.4	1.25	Melville†	96	55	79.6	3.75
Lakin†	114	35	73.4	1.86	Minden†	96	58	79.6	5.84
Lebo†	96	52	72.6	13.10	Monroe†	96	61	80.2	8.48
Liberal†	108	52	77.7	1.67	Natchitoches†	95	58	75.0	9.29
Mackaville†	112	45	76.8	4.08	New Iberia	96	66	80.0	6.87
McPherson†	100	48	74.6	7.74	Opelousas†	94	65	80.2	3.74
Manhattan†	102	48	74.6	6.62	Oxford	95	55	77.4	9.70
Manhattan e†	102	50	72.6†	5.93	Paincourtville†	97	60	80.6	11.39
Marion†	99	49	73.3	5.33	Plaquemine	94	67	77.7	8.36
Marmaton				7.08	Rayne†	96	58	78.9	5.00
Medicine Lodge				1.21	Roseland	98	62	79.7	6.87
Minneapolis†	103	45	74.9	7.02	Schriever†	100	68	82.6	6.49
Monument†	103	50	73.4	3.75	Shell Beach	96	65	81.0	5.09
Morland†	106	42	73.6	1.75	Sugar Ex. Station†	99	67	80.7	7.56
Morton†	109	47	77.6	1.68	Sugartown†	94	51	75.2	8.74
Mount Hope†	102	62†	76.2†	3.96	Thibodeaux				5.38
Ness City†				3.31	Wallace	96	68	80.4	7.05
Norton†	103	46	75.4	2.23	West End				4.57
Oberlin†				2.94	Winnfield†	95	60	78.6	8.67
Olathe†	92	54	72.4	4.26	Winnboro	99	54	76.8	3.31
Owango†	101	46	74.3	2.46	Maine.				
Phillipsburg†	106	44	73.7	4.22	Bar Harbor	80	42	60.1	2.17
Plainville†		50	79.0	2.50	Belfast†	81	51	61.6	2.73
Pleasant Dale†	109	45	74.3	3.09	Calais†	83	43	63.4	1.82
Quinter†	100	54	84.0	1.00	Cornish†	88	49	64.8	3.09
Rome††	100	54	75.6	1.76	Easton†	96	43	65.2	3.05
Sedan†	99	55	75.1	2.21	Fairfield	85	38	64.5	0.99
Sharon Springs†	100	50	73.9	2.05	Farmington†	95	35	65.1	2.78
Sterling†	104	49	76.9	4.60	Fort Kent†	98	34	65.3	2.31
Syracuse†	100	40	73.0	1.31	Gardiner†	91	41	63.8	2.56
Tribune†	105	45	73.6	3.36	Lewiston†	92	43	64.4	2.51
Ulysses†	111	52†	78.2†	1.37	Mattawamkeag†	90	38	66.6	2.80
Wa Keeney†	100	60	79.2	1.80	Mayfield	88	36	63.0	2.69
Wakenfield†	106	58	76.6	8.15	Petit Menan†	72	50	56.8	2.60
Wallace†				1.70	West Jonesport†	83	45	56.3	2.60
Wallace b†	105	56	81.3	1.75	Massachusetts.				
Wamego†	98	56	74.8	6.81	Adams	92	45	66.8	3.29
Washington†	101	49	73.6	3.81	Amherst†	91	45	66.8	3.29
Winona†	106	52	79.6	2.91	Amherst Ex. St'n a	93	43	66.6	3.23
Yates Center†	98			5.26	Amherst Ex. St'n b	94	42	66.9	3.32
Kentucky.					Andover	96	47	65.4	2.57
Bowling Green††	90	50	69.8	5.87	Ashland				2.29
Burnside†				4.69	Bedford	91	45	64.6	2.95
Caddo††	88	58	72.0	1.11	Beverly Farms	90	46	60.6	3.30
Canton††	91	60	74.2	1.11	Blue Hill (sum)†	90	45	63.4	2.69
Carrollton††	92	60	74.7	3.47	Blue Hill (valley)†	89	42	64.5	2.69
Cattlettsburg††	99	59	76.7	1.99	Boston				2.64
Earlington†	94	56	75.5	4.40	Cambridge a	94	46	66.8	1.62
Eddyville†				2.46	Cambridge b	93	48	65.8	2.18
Edmonton†	88	53	71.6	6.46	Chestnut Hill	93	44	67.2	2.33
Eubank†	89	50	69.3	3.24	Clinton				1.95
Falmouth†				5.36	Concord a†	91	44	64.6	2.95
Franklin††	91	62	74.5	7.70	Dudley†	92	40	65.3	1.13
Greendale†	89	61	72.7	4.78	Egg Rock, Nahant	87	43	60.2	2.77
Greensburg††	90	57	72.2	8.52	Fall River a†	93	40	63.8	2.77
Harrodsburg†	96	48	72.2	4.22	Fiskdale				2.73
Hendricks†		54		3.20	Fitchburg a†	90	50	66.0	3.65
Lagrange†	95	55†	72.3†	3.51	Fitchburg b	92	46	65.7	2.22
Lancaster				5.89	Framingham	93	42	66.4	2.46
Louisia†	96	50	73.0	4.29	Gilbertville	92	43	66.7	4.47
Matlock†	92	58	73.8	5.03	Great Barrington†	93	45	65.7	2.17
Middlesboro†	91	53	70.6	4.36	Groton a	90	46	65.0	2.94
Mount Sterling††	91	50	70.0	4.15	Groton b†	97	48	72.6	2.35
Munfordville††	89	58	74.1	9.30	Hingham				2.35
Paducah a†				4.80	Hyannis†	94	50	67.7	5.59
Paducah b†	93	48	76.1	4.29	Kendall Green†	94	45	68.1	2.04
Pellville†	92	53	73.8	2.46	Lake Cochituate	94	39	66.9	2.75
Princeton†	94	55	74.9	1.38	Lawrence	92	50	66.4	2.74
Russellville††	84	63	73.5	6.91	Leeds	95	43	66.6	2.73
Shelby City†	88	55	71.0	6.16	Leominster†	88	48	64.5	3.60
Shelbyville†	97	50	72.0	2.93	Long Plain†	90	50	63.8	3.59
South Fork†				4.38	Lowell a	94	48	66.8	2.41
Springfield†	87	52†	71.2†	5.45	Lowell b	93	44	65.4	2.94
Wickliffe††	93	60	74.6	6.11	Lowell c	96	48	67.3	3.73
Williamsburg a†				5.93	Ludlow Center	93	38	64.4	3.07
Louisiana.					Lynn b	92	40	65.3	2.79
Abbeville†	97	65	78.9	2.80	Mansfield†	96	51	64.8	2.99
Alexandria†	98	59	77.8	4.33	Middleboro	91	40	63.9	3.96
Amité†	99	61	79.0	10.56	Milton†	90	48	62.6	2.96
Baton Rouge††	92	66	78.5	6.84					
Calhoun	97	63	78.2	7.82					
Cameron†	99	58	77.6	7.15					
Cameronville†	95	65	81.4	4.51					
Clinton†	100			5.36					
Coushatta a†				9.33					
Coushatta b†	97	58	79.1	8.20					
Covington†	96	62	77.0	6.80					
Davis†	98	56	78.1	5.33					
Dehi†				4.65					
Donaldsonville†	93	71	80.4	8.67					
Emilie†	95	68	80.0	5.55					
Farmerville	94	61	78.0	7.52					
Franklin†	96	69	80.6	4.44					
Girard†	96	49	78.2	1.79					
Grand Coteau†	94	67	79.4	7.40					
Hammond†	96	65	79.7	5.27					
Houma†	96	68	80.3	5.66					
Jeannerette	99	58	81.4	9.01					
Lafayette†	100	66	81.6	5.48					
Lake Charles†	97	62	81.8	6.30					
Lake Providence†	98	62	81.9	6.03					
Lawrence†	97	68	80.5	5.61					
Liberty Hill	100	57	79.4	6.44					
Many†	93	63	79.8	11.20					
Maupass	101	66	80.8	6.42					

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Massachusetts—Con.</i>				<i>Ins.</i>	<i>Minnesota—Cont'd.</i>				<i>Ins.</i>
Monroe.....	86	42	64.2	3.60	Bingham Lake.....	90	50	70.7	2.28
Monson.....	93	44	67.2	3.68	Blooming Prairie.....	92	50	73.8	2.75
Mystic Lake.....	.....	.....	.....	2.10	Bonniwells Mills.....	92	57	73.8	0.97
Mystic Station.....	.....	.....	.....	2.07	Cambridge.....	97	40	70.2	1.14
New Bedford.....	91	47	61.9	3.00	Camden.....	90	44	69.8	2.68
New Bedford.....	93	42	63.6	3.13	Clear Lake.....	91	36	70.2	1.35
Newburyport.....	.....	.....	.....	1.46	Collegeville.....	92	40	71.0	1.70
North Billerica.....	98	47	69.1	3.16	Crookston.....	104	40	69.0	.....
Plymouth.....	88	53	66.4	2.50	Crookston.....	94	40	70.8	3.86
Provincetown.....	90	45	63.6	5.50	Farmington.....	95	47	69.2	1.49
Randolph.....	.....	.....	.....	2.48	Fergus Falls.....	95	47	69.2	1.49
Roberts Dam.....	.....	.....	.....	2.25	Fort Ripley.....	97	48	69.6	3.39
Roxbury.....	91	48	64.4	2.15	Grand Meadow.....	97	48	69.6	3.86
Royalston.....	86	50	65.4	4.38	Granite Falls.....	95	40	69.8	2.60
Salem.....	.....	.....	.....	3.31	Holland.....	95	38	67.8	2.16
Salisbury.....	.....	.....	.....	2.89	L. Winnibigoshish.....	95	45	67.0	1.86
Somerset.....	98	54	68.9	3.34	Leech Lake.....	97	36	68.2	1.81
South Dennis.....	90	45	62.6	0.56	Long Prairie.....	95	37	69.8	1.04
Springfield Arm'y.....	96	50	69.2	3.69	Luverne.....	.....	.....	.....	1.50
Taunton.....	92	43	65.2	2.41	Maple Plain.....	93	44	70.7	1.43
Taunton.....	93	40	65.0	2.17	Minneapolis.....	93	45	71.7	1.76
Taunton.....	95	40	65.1	2.47	Minneapolis.....	90	45	71.6	.....
Turners Falls.....	92	50	67.9	2.77	Minnesota City.....	96	48	72.3	1.27
Wakefield.....	94	45	65.5	1.82	Montevideo.....	95	38	70.4	1.55
Waltham.....	.....	.....	.....	2.06	Morris.....	96	49	70.8	0.67
Wellesley.....	93	46	65.8	2.03	New London.....	94	39	70.6	.....
Westboro.....	90	43	62.6	2.11	Ortonville.....	.....	.....	.....	2.05
Williamstown.....	87	46	68.0	2.08	Park Rapids.....	99	37	67.5	4.71
Winchester.....	.....	.....	.....	1.81	Pine River.....	91	50	69.6	3.91
Winthrop.....	93	48	64.1	2.43	Pokegama Falls.....	96	31	67.0	3.22
Worcester.....	94	45	66.4	2.28	Redwood Falls.....	.....	.....	.....	1.76
Worcester.....	91	46	65.4	2.54	Rochester.....	91	45	69.6	0.81
<i>Michigan.</i>					Rolling Green.....	88	51	69.9	1.65
Adrian.....	94	44	70.0	3.64	Saint Charles.....	92	44	69.9	2.00
Albion.....	90	51	70.0	4.37	Saint Cloud.....	96	50	72.1	0.54
Allegan.....	95	48	69.7	2.96	Saint Oloff.....	96	44	69.8	0.84
Alma.....	94	44	68.2	3.38	Saint Peter.....	93	43	72.0	3.18
Ann Arbor.....	87	49	69.4	4.05	Sandy Lake Dam.....	95	36	68.9	.....
Arbela.....	.....	.....	.....	6.77	Wabasha.....	92	57	73.2	1.61
Ball Mountain.....	87	47	68.0	6.47	Willmar.....	95	41	68.4	2.02
Bear Lake.....	91	38	65.4	2.20	Winona.....	95	55	73.1	1.60
Bellaire.....	97	37	66.8	1.92	<i>Mississippi.</i>				
Benton Harbor.....	91	48	69.4	3.20	Agricultural College.....	95	61	78.3	1.25
Benzonia.....	92	41	65.4	1.70	Batesville.....	92	56	76.0	7.67
Berlin.....	96	42	69.4	4.90	Biloxi.....	93	66	79.4	9.18
Berrien Springs.....	94	54	71.5	3.85	Brookhaven.....	99	61	79.4	6.93
Berrien Springs.....	.....	.....	.....	2.97	Canton.....	93	63	77.6	4.62
Birch Run.....	94	48	70.4	5.87	Clarksdale.....	92	60	76.8	4.64
Birmingham.....	95	48	71.0	4.70	Columbus.....	93	60	76.8	3.64
Boon.....	94	38	66.4	3.14	Corinth.....	98	48	76.0	7.51
Brown City.....	92	45	69.6	2.67	Crystal Springs.....	101	61	80.4	6.24
Calumet.....	91	37	64.2	1.37	Edwards.....	97	62	80.8	4.10
Charlevoix.....	94	36	63.6	0.34	Enterprise.....	96	59	77.1	4.65
Clinton.....	96	45	69.9	3.72	Fayette.....	93	62	78.4	6.10
Crystal Falls.....	97	31	66.4	0.90	Greenville.....	94	62	77.8	7.65
Ewart.....	95	39	67.0	3.26	Greenville.....	97	58	79.2	7.71
Fairview.....	90	50	68.0	2.70	Hattiesburg.....	94	69	80.8	4.40
Fitchburg.....	93	42	68.2	6.47	Haslehurst.....	97	60	78.4	8.21
Flint.....	94	46	67.4	4.23	Hernando.....	94	58	77.2	5.04
Gaylord.....	93	40	66.0	2.15	Holly Springs.....	95	56	77.1	4.12
Glenwood.....	83	48	65.6	3.27	Jackson.....	97	60	79.6	1.79
Grape.....	88	50	70.0	4.59	Kosciusko.....	93	59	76.0	3.16
Grayling.....	98	35	66.8	0.97	Lake.....	95	59	77.4	2.84
Hanover.....	90	48	69.2	4.74	Logtown.....	95	68	79.8	7.25
Harbor Springs.....	94	38	65.1	0.78	Louisville.....	95	57	77.0	1.35
Harrisville.....	91	37	63.2	1.70	Moss Point.....	97	62	81.6	5.85
Hart.....	93	44	71.8	0.95	Natchez.....	95	67	79.6	5.35
Haustings.....	93	50	69.6	5.56	Palo Alto.....	95	61	78.1	2.33
Hayes.....	94	44	68.4	1.25	Pontotoc.....	94	57	75.9	5.84
Highland Station.....	.....	.....	.....	5.89	Port Gibson.....	97	57	78.2	8.68
Howell.....	92	45	68.3	4.37	University.....	93	56	76.3	6.09
Ivan.....	98	42	68.0	0.92	Vaiden.....	98	57	77.5	3.92
Jeddo.....	90	45	66.6	5.38	Water Valley.....	100	53	74.1	6.76
Kalamazoo.....	89	52	70.6	2.94	Waynesboro.....	97	60	78.6	5.72
Lansing.....	89	50	68.6	7.19	Woodville.....	98	64	80.5	4.37
Lathrop.....	95	48	66.7	1.73	Yazoo City.....	.....	.....	.....	4.08
Lewiston.....	99	43	70.4	1.67	<i>Missouri.</i>				
Madison.....	89	46	69.4	3.37	Akron.....	.....	.....	.....	5.35
Marshall.....	97	47	69.3	4.17	Appleton City.....	95	52	74.6	4.59
Mayville.....	91	50	69.4	3.86	Arlington.....	.....	.....	.....	4.90
Mio.....	100	41	69.4	.....	Arthur.....	.....	.....	.....	6.72
Montague.....	86	35	64.6	0.28	Bethany.....	96	46	73.6	4.31
Mottville.....	94	45	70.2	2.64	Big Piney.....	.....	.....	.....	3.60
North Marshall.....	87	43	66.2	3.50	Boonville.....	.....	.....	.....	7.08
Olivet.....	90	38	66.2	3.60	Brunswick.....	96	51	74.1	6.89
Ovid.....	92	48	69.3	4.40	Bryant.....	92	42	71.0	2.41
Paris.....	93	42	66.4	2.60	Cabool.....	.....	.....	.....	4.20
Parkville.....	.....	.....	.....	3.61	Canton.....	.....	.....	.....	1.29
Rawsonville.....	90	50	69.8	4.40	Cape Girardeau.....	.....	.....	.....	4.65
Rockland.....	98	41	68.1	2.58	Carrollton.....	95	54	73.3	3.75
Saint Ignace.....	88	40	61.4	2.30	Carthage.....	.....	.....	.....	4.24
Sand Beach.....	93	43	64.1	.....	Conception.....	88	40	72.0	7.08
Stockbridge.....	.....	.....	.....	4.80	Cowgill.....	.....	.....	.....	3.04
Thornville.....	93	51	70.4	3.87	Dadeville.....	.....	.....	.....	4.96
Vandalia.....	88	49	68.9	4.17	Darkeville.....	95	52	73.4	5.83
Williamston.....	86	56	68.4	5.05	Dixon.....	94	55	75.6	5.35
Ypsilanti.....	91	46	67.5	4.32	East Lynne.....	.....	.....	.....	3.40
<i>Minnesota.</i>					Edge Hill.....	94	54	76.0	5.11
Ada.....	41	.....	.....	2.01	Eight Mile.....	91	56	71.4	3.29
Albert Lea.....	98	44	68.6	2.77	Eldon.....	92	54	71.5	4.06
Alexandria.....	.....	.....	.....	3.39	Emma.....	92	60	76.7	3.35
Alexandria.....	95	48	71.6	.....	Farmersville.....	.....	.....	.....	4.95
Alma City.....	90	42	59.3	2.70	Fayette.....	98	51	75.2	7.03
Beardsley.....	.....	.....	.....	1.58	Fox Creek.....	90	60	73.4	4.17
					Fulton.....	.....	.....	.....	7.79

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Missouri—Cont'd.</i>				<i>Ins.</i>	<i>Nebraska—Cont'd.</i>				<i>Ins.</i>
Gainesville.....	94	49	70.8	2.97	Fremont.....	91	51	73.2	4.00
Gallatin.....	95	56	75.9	6.65	Geneva.....	.....	.....	.....	4.57
Glasgow.....	95	52	73.1	8.58	Genoa.....	95	52	72.3	3.23
Glensted.....	.....	.....	.....	3.00	Gering.....	101	38	71.5	1.89
Gordonville.....	.....	56	69.5	7.30	Glenwood.....	99	49	70.0	1.41
Gorin.....	.....	60	71.6	3.22	Haigler.....	104	40	72.6	.....
Grove Dale.....	.....	.....	.....	6.24	Hartington.....	95	42	70.7	0.79
Harrisonville.....	95	49	75.3	3.43	Harvard.....	104	51	73.9	5.85
Hastain.....	91	50	72.0	3.21	Hebron.....	97	46	73.6	3.67
Hermann.....	.....	.....	.....	5.98	Holdrege.....	.....	.....	.....	75.3
Houston.....	91	46	71.2	7.06	Imperial.....	101	45	72.4	3.00
Humansville.....	96	44	72.6	5.25	Indianola.....	108	40	73.3	3.80
Ironton.....	86	56	70.0	5.46	Kennedy.....	97	49	69.1	5.44
Jefferson City.....	98	56	74.2	4.68	Kimball.....	101	38	69.4	0.61
Lamar.....	91	51	73.7	4.05	Lexington.....	98	40	70.7	2.74
Lamonte.....	.....	.....	.....	3.90	Lincoln.....	92	50	73.0	4.27
Langdon.....	93	49	72.4	4.25	Lynch.....	96	52	73.4	2.20
Lebanon.....	88	51	70.8	2.89	Madrid.....	100	48	72.8	3.08
Lexington.....	93	52	72.4	2.45	Marquette.....	98	55	.....	3.54
Louisiana Bridge.....	.....	.....	.....	3.84	Minden.....	101	50	71.5	4.54
McCune.....	89	53	71.3	4.31	Mullen.....	93	48	70.8	2.86
Malden.....	.....	.....	.....	8.30	Nebraska City.....	88	50	71.9	3.94
Mansfield.....	.....	.....	.....	2.58	Nesbit.....	99	41	70.0	3.69
Marceline.....	.....	.....	.....	5.57	Norfolk.....	92	47	75.0	1.18
Marshall.....	95	48	71.6	4.49	North Loup.....	96	40	73.2	2.16
Mexico.....	95	50	72.4	6.70	Oakdale.....	98	44	71.9	1.02
Miami.....	92	58	71.6	6.52	Ogallala.....	103	48	73.1	2.37
Mine La Motte.....	86	52	71.8	5.57	O'Neill.....	95	48	71.7	2.97
Mount Vernon.....	.....	.....	.....	3.99	Oughb.....	.....	.....	.....	2.12
Neosho.....	96	45	73.4	2.46	Palmer.....	100	60	71.5	1.70
New Boston.....	98	54	70.5	7.01	Plattsmouth.....	102	56	73.8	5.17
New Hartford.....	90	60	74.2	5.95	Ponca.....	102	56	73.8	2

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>N. Hampshire—Con.</i>					<i>New York—Cont'd.</i>				
Grafton ⁸	91 ^a	39 ^b	69.0 ^a	2.73	Canton ¹	90	50	68.1	3.05
Hanover ¹	87	44	66.4	4.72	Castile.....				1.46
Keene.....	91	43	65.4	3.21	Chenango Forks.....				3.21
Lakeport.....	93	42	66.3	2.59	Cherry Creek.....				3.63
Littleton ¹	91	41	64.0	5.04	Constableville ¹	87	44	64.2	2.93
Manchester ¹	90	46	66.8	1.98	Cooperstown ¹	84	43	66.0	2.20
Nashua.....	94	46	66.5	2.71	Cortland.....	86	46	67.1	1.45
Newton.....	93	42	64.3	2.42	De Kalb Junction.....				2.37
North Conway.....	91	39	64.0	1.71	Demeter.....				3.77
Plymouth ¹	95	43	65.0	1.93	Dunkirk.....	79	49	65.9	3.40
Sanborn ¹	89	42	63.8	2.41	Easton.....				3.68
Stratford.....	83	41	68.8	2.86	Eden Center.....	98	40	68.8	4.86
Wiers Bridge.....				2.41	Ellis.....				3.48
West Milan.....	87	37	62.6	3.12	Elmira ¹	93	50	71.6	3.62
<i>New Jersey.</i>					Factoryville ¹	96	44	69.2	1.97
Allaire.....	96	44	67.6	.....	Fleming ¹	89	50	68.5	1.32
Asbury Park.....	97	50	68.8	5.28	Fort Niagara.....	92	51	69.0	2.02
Barneget.....	96	46	68.0	5.15	Friendship ¹	92	41	65.0	2.04
Bayonne.....	100	52	70.6	2.35	Geneva ¹	96	40	68.4	3.13
Beverly ¹	103	48	69.8	2.35	Gloversville ¹	92	43	66.6	1.95
Billingsport L. H. ¹	94	58	73.5	2.46	Honeybrook Brook ¹	94	46	66.6	1.89
Boonton.....				4.43	Humphrey ¹	87	45	66.4	4.24
Bridgeton.....	98	51	74.0	0.46	Ithaca ¹	93	46	68.1	2.50
Butler.....				3.01	Jamestown ¹	89	54	69.7	.....
Camden.....	97	50	71.4	3.35	Kings Station.....				1.52
Cape May.....	92	48	69.0	2.52	Lebanon Springs.....	90	40	65.3	2.67
Charlotteburg.....	95	42	65.9	3.22	Le Roy.....	91	48	69.5	0.50
Chester.....	93	49	67.7	4.92	Lockport.....	92	48	69.3	2.54
Deckertown.....	98 ^a	50	69.3	2.54	Lowville.....	91	44	69.1	1.90
Dover.....	98	42	67.2	7.02	Madison Barracks.....	88	49	69.1	1.66
Egg Harbor City ¹	99	44	68.7	3.63	Malone ¹	85	47	67.7	3.29
Elizabeth ¹	103	52	71.9	2.40	Middletown ¹	94	50	68.6	.....
Franklin Furnace.....	93	45	67.8	2.20	Minnewaska ¹	92	48	64.9	3.03
Franklinville.....	99	41	69.9	1.12	Mount Morris.....	92	44	67.9	0.87
Freehold ¹	94	49	69.0	3.54	Newark Valley.....				1.76
Friesburg.....				1.23	Newfield Summit.....	87	47	67.0	.....
Gillette.....	98	40	69.7	3.33	New Lisbon.....	91	39	63.4	1.97
Hammononton.....				0.59	Nth Hammononton ¹	95	45	68.4	1.96
Hanover.....	94	47	69.2	2.05	Number Four ¹	95	41	64.5	5.05
Highland Park ¹	98	48	70.0	3.05	Ogdensburg ¹	85	51	67.2	2.20
Hightstown ¹	100	48	67.9	3.23	Oxford.....	93	44	69.0	3.70
Imlaytown.....	103	49	71.6	2.96	Palermo ¹	93	46	68.1	2.35
Junction.....				3.16	Perry City ¹	94	45	66.2	2.16
Lambertville.....	97	49	70.2	3.41	Phonix.....				3.83
Locktown.....	98	48	70.4	4.75	Pine City.....	90	50	66.3	3.47
Millville.....	103 ^a	46 ^a	73.2 ^a	0.43	Plattsburg B'ks.....	90	50	66.3	2.42
Moorestown ¹	98	48	71.6	3.98	Port Jervis.....	93	48	68.2	3.79
Newark.....	96	52	68.4	3.55	Potsdam ¹	87	48	67.6	5.00
Newark B'k ¹	97	52	69.9	2.89	Poughkeepsie.....	98	42	68.5	1.49
New Brunswick.....	100	49	71.4	3.28	Rome.....	87	48	68.9	1.79
New Brunswick B.....	96	50	68.8	3.27	Romulus.....	96	49	70.0	1.41
Newton ¹	91	44	69.0	1.77	Rondout ¹				2.91
Ocean City.....	91	49	68.4	2.09	Setauket ¹	93	50	65.4	0.58
Oceanic ¹	101	58	73.6	0.85	South Canisteo.....	92	42	64.6	4.78
Paterson.....	101	50	70.6	2.24	South Kortright ¹	92	37	65.7	5.76
Pensauken.....				3.26	Stillwater ¹	93	48	69.4	2.61
Plainfield.....	100	48	70.4	2.58	Turin.....	85	46	64.6	4.25
Rancocas.....	98	52	69.0	3.17	Utica.....	92	45	68.8	2.35
Readington ¹	96	60	74.2	.....	Varysburg.....	91	46	67.1	.....
River Vale ¹	98	43	69.0	3.39	Victor.....	96	47	71.4	4.09
Salem.....	94	45	69.8	2.35	Wappingers Falls.....	97	49	70.5	2.09
Somerville.....	103	48	70.6	4.26	Watertown.....	90	48	69.6	2.83
South Orange ¹	97	50	68.4	3.61	West Chazy.....	91	48	66.6	5.51
Tenafly ¹	95	47	69.3	3.72	West Point ¹	99	48	70.2	1.83
Toms River.....	99	44	68.8	3.26	Willea Point.....	97	51	68.2	1.96
Trenton.....	97	55	73.4	3.21	<i>North Carolina.</i>				
Vineland.....	93	44	71.2	0.71	Asheville ¹	85	51	68.0	3.91
Whiting.....	101	47	70.1	2.14	Auburn.....				5.32
Woodbine.....	94	43	69.9	2.14	Baileys.....				7.05
<i>New Mexico.</i>					Bakersville ¹	85	44	67.6	4.86
Albany ¹	104	51	77.4	0.37	Blowing Rock ¹	79	43	64.4	10.73
Albuquerque ¹	96	53	76.0	T.	Bryson City ¹				3.74
Chama ¹	93	25	61.6	0.14	Chapel Hill ¹	95	55	76.0	4.21
Deming ¹	108	72	88.8	0.01	Columbia.....	80	54	65.8	11.37
East Las Vegas ¹	90	43	67.8	0.25	Douglas.....	96	51	74.6	7.62
Embudo.....	104	42	74.2	T.	Experiment ¹ Farm.....	91	58	74.8	3.79
Estalita Springs ¹				0.07	Fayetteville ¹				5.77
Folsom ¹	96 ^a	37 ^a	68.6 ^a	0.73	Goldboro ¹	91	57	75.8	6.23
Fort Bayard.....	99	47	74.4	T.	Greensboro ¹	94	55	74.1	4.92
Fort Wingate.....	93			T.	Henderson ¹	94	59	74.1	2.71
Gallinas Spring ¹	101	40	75.3	1.43	Highlands ¹	79	46	62.3	9.66
Halls Peak ¹	86	26	60.6	0.46	Horse Cove ¹	84	52	66.1	9.13
La Luz ¹	93	59	77.4	0.04	Lenoir ¹	84	58	70.5	3.50
Olio ¹	101	36	71.1	0.00	Lewiston.....				5.72
Socorro ¹	102	55	79.9	0.03	Lillington ¹				0.53
Springer ¹	101	40	71.5	0.14	Littleton ¹	95	54	74.3	4.05
Taos ¹	98	30	68.7	T.	Louisburg ¹	88	56	74.4	2.87
<i>New York.</i>					Lumberton ¹	94	57	76.8	7.83
Addison ¹	93	46	67.1	3.04	Lynn ¹	88	53	71.8	5.23
Akron.....				2.77	Marion.....	90	53	71.2	5.32
Alfred Center.....	91	45	65.8	1.93	Mocksville ¹	90	62	73.4	5.63
Amersand ¹	89 ^a	44 ^a	65.4 ^a	3.12	Morgantown ¹	89	55	71.3	7.14
Angelica ¹	90	40	65.6	2.35	Mount Airy ¹	88	50	71.0	5.64
Arcade ¹	88	39	65.8	3.63	Mount Holly ¹				7.37
Arkwright.....	83	50	65.5	.....	Mount Pleasant ¹	89	56	73.4	6.45
Atlanta.....				3.04	Murphy ¹				5.61
Avon.....				1.02	Newbern ¹	90	56	72.8	5.70
Baldwinsville ¹	91	51	68.9	2.87	Oak Ridge ¹	91	56	72.5	6.42
Bedford.....				1.99	Pittsboro.....	89	47	71.0	3.35
Binghamton ¹	92	45	68.0	2.58	Raleigh ¹	89	62	75.7	3.30
Boonville.....				2.63	Rockingham ¹	102	56	77.1	4.04
Brentwood ¹	97	44	66.4	0.80	Roxboro ¹	92	60	74.8	3.21
Brookport ¹	92	49	72.3	1.07	Salisbury ¹	89	62	74.7	5.66
Brookfield ¹	91	37	66.1	0.77	Saxon ¹	92	48	71.9	7.68

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>N. Carolina—Cont'd.</i>					<i>Ohio—Cont'd.</i>				
Shelby†	88	57	74.6	9.16	Hiram ¹	89	51	68.5	2.50
Sloan	90	56	75.2	5.33	Jacksonboro ¹	91	53	70.1	3.65
Smithfield	91	56	74.6	10.12	Kenton ¹	94	45	70.8	4.61
Soapstone M't†	91	50	72.8	5.88	Kilbourne ¹	91	52	68.8	2.82
Southern Pines†	97	53	73.6	7.10	Killbuck	93	46	71.2	3.50
Tarboro	94 ^a	53 ^a	75.4 ^a	9.37	Leipsic	100	52	74.8	3.61
Warrenton				2.16	Levering	88	44	67.4	3.35
Washington	95	57	75.8	5.13	Logan ¹	96	40	71.6	7.45
Weldon†	95	53	75.3	5.50	Lordstown ¹	91	42	68.6	1.50
Willeyton	92	55	73.8	6.88	Lowell	98	46	72.8	4.56
<i>North Dakota.</i>					McArthur	95	42	70.8	4.28
Ashley	95	38	68.2	2.35	McConnellsville ¹	92	49	71.2	4.62
Berlin†	101	38	68.4	1.49	McLurey	100	44	71.2	4.34
Bottineau	96	40	65.9	4.35	Mansfield†				2.93
Cannon Ball	101	39	70.2	4.07	Marietta†				4.41
Churches Ferry	94	40	66.0	5.25	Marietta ¹	92	53	72.0	4.08
Dawson†	100	30	65.2	5.43	Marion ¹	94	45	69.2	2.86
Dickinson†	98	37	67.8	1.45	Millford	93	46	71.0	4.90
Dunsmuir	91	37	67.0	3.69	Millport	87	40	68.3	3.20
Ellendale†	100	42	71.8	3.35	Montpelier ¹	90	45	70.1	4.24
Fargo†	101	41	69.8	3.62	Mountville	100	40	72.0	3.17
Fortman	98	40	70.2	3.49	Napoleon				1.78
Fort Stevenson†	95	37	65.8	3.80	Nelsonville				3.94
Fort Yates†	102	42	69.3	4.91	New Alexandria ¹	91	51	70.8	2.97
Gallatin†	101	41	68.6	2.76	New Berlin	92			1.83
Grafton†	99	42	66.2	3.54	New Comerstown ¹	94	45	68.7	4.99
Grand Forks† ¹	99	43	67.3	3.19	New Holland	98	45	71.0	4.82
Jamestown†	97	43	69.2	2.08	North Lewisburg ¹	92	48	72.3	6.75
Kelso†	103	41	68.3	4.03	North Royalton	93	47	69.3	1.77
Larimore	100	42	69.4	2.09	Northwood ¹	91	46	70.1	5.20
Mayville†	99	42	68.9	3.96	Oberlin ¹	93	47	69.8	1.64
Medora†	102	39	67.2	0.86	O. S. University ¹	92	47	70.8	2.65
Milton†	98	38 ^a	65.2 ^a	3.64	Orangeville	92	43	68.6	2.20
Minto†	101	44	69.1	2.45	Pataskala	95	46	70.4	3.86
Napoleon†	99	37	67.4	3.36	Plattsburg				4.72
New Salem	95	38	66.3	5.30	Pomeroy	93	48	71.7	2.16
Oakdale†	92	41	64.4	1.60	Portsmouth†				3.09
Power ¹ †	102	46	68.3	3.60	Portsmouth ¹	100	52	71.5	2.46
Saint Johns†	89	40	63.1	4.19	Ridge	61	41	70.5	3.51
Sylveston†	101	40	66.8	5.44	Ridge ¹ & Corners	90	44	68.9	2.84
Valley City†	102	33	66.4	2.33	Ripley				4.12
Wahpeton†	101	45	70.2	2.14	Rittman†	90	46	68.4	0.61
White Rice†			70.8	3.06	Sharon Center				1.49
Williamsport	102	37	67.6	2.77	Shenandoah	94	46	70.0	1.93
Woodbridge†	94	37	61.5	4.62	Sidney†				6.08
Yule†	102	40	65.2	2.18	Springboro				4.02
<i>Ohio.</i>					Stoutsville				6.29
Akron ¹	92	50	70.7	1.71	Strongsville	96	56	74.8	1.13
Annapolis	96	44	70.8	3.91	Sylvania ¹	95	45	75.7	3.27
Arcanum				4.19	Thurman	96	48	72.1	2.86
Ashland ¹	88	67	70.9	2.23	Tyrene	94	50	73.0	3.53
Athens ¹	93	48	70.5	4.11	Upper Sandusky ¹	91	50	70.7	2.59
Auburn	94	42	66.4	3.67	Vanceburg				4.21
Bangorville ¹	88	47	69.0	3.11	Van Wert	91	42	67.4	2.87
Bellevue ¹	95	42	69.2	1.84	Vermillion				1.68
Bement ¹	95	45	67.2	2.26	Vicksery				1.45
Benton Ridge	96	43	70.7	3.22	Walnut				5.16
Bethany	93	49	71.0	3.51	Warren	94	44	69.5	4.68
Big Prairie	90	45	68.6	1.51	Wauseon ¹	95	44	70.6	3.09
Blasells	92	46	69.4	1.92	Waverly ¹	97	48	72.7	4.08
Bloomington ¹	91	51	70.1	2.58	Waynesville				3.93
Bloomington				3.39	Wellington				0.63
Bowling Green				1.45	Westerville ¹	91	49	69.8	2.92
Bucyrus ¹	92	48	69.8	0.85	West Milton ¹	94	52		7.99
Cadiz				3.33	Weymouth	95	44	68.7	1.17
Caledonia†				2.73	Wheeler†				70.8
Cambridge	91	47	69.0	3.28	Wooster ¹	92	45	71.2	2.51
Campbelltown ¹	92	47	66.8	4.17	Wooster ¹ †				2.57
Camp Dennison ¹	93 ^a	49 ^a	70.5 ^a	3.81	Youngstown ¹	96	45	71.4	1.11
Canton†				3.14	Zanesville†				2.05
Cardington				2.39	<i>Oklahoma Ter.</i>				
Carrollton	96	43	69.9	2.87	Anadarko†	108	50	79.5	0.70
Celina†	92	50	71.2	3.72	Buffalo	106	45	79.2	2.31
Cherry Fork	100	45	70.0	5.14	Burnett†	101	51	77.2	1.45
Cheshire				4.44	Cloud Chief	110 ^a	45 ^a	79.4 ^a	2.22
Chicago	93	44	70.6	1.57	Fort Reno†	104	50	76.4	3.25
Circleville†				4.32	Fort Sill	104	50	78.8	0.51
Clarksville ¹	92	50	71.0	5.17	Gate City†	112	46	77.8	0.94
Cleveland ¹	90	51	70.0	0.94	Guthrie†	104	57	80.0	3.15
Coalton	95	45	70.1	2.90	Keokuk Falls†	100	49	74.4	2.88
Colebrook				3.26	Mangum†	104	52	78.6	1.34
Dayton†	93	51	72.6	4.08	Sac & Fox Agency†	101	50	74.6	3.17
Dayton ¹				5.18	Stillwater†	103 ^a	54 ^a	77.3 ^a	1.24
Defiance	88	47	70.0	3.46	Winnview†	107	52	79.6	3.73
Demos	89	53	70.0	4.69	<i>Oregon.</i>				
Dupont ¹	89	58	71.1	1.96	Albany†	92	39	58.0	0.81
Ellsworth	90	47	68.0	2.52	Albany ¹ b ¹	86	50	62.2	0.64
Elyria	95	49	70.4	1.23	Arlington†	87	44	63.5	0.11
Findlay ¹	93	45	69.6	3.36	Ashland ¹ a ¹	84	45	62.4	1.10
Fostoria ¹	93	50	73.1	2.01	Ashland b	91	33	58.5	1.05
Frankfort	92	42	69.4	3.61	Aurora ¹	90	45	62.0	1.37
Garrettsville ¹	91	42	66.1	2.53	Aurora (near)	85	37	56.7	1.93
Georgetown ¹	98	55	72.4	5.10	Bandon ¹	78	40	56.0	2.29
Granville	91	45	68.9	5.41	Beulah	88	31	58.0	0.29
Gratiot	93	47	70.0	2.95	Brownsville ¹	92	52	61.4	1.14
Greenfield	102	50	76.0	3.90	Burns†	85	29	54.0	T.
Green Hill	94	40	68.8	3.41	Canyon City†	91	38	62.7	0.37
Greenville ¹	83	40	70.0	5.19	Cascade Locks	80	40	58.8	3.02
Guy'sville ¹	90	51	71.5	4.84	Comstock ¹	96	46	59.5	0.99
Hackney	90	49	71.8	3.80	Cornelius				1.50
Hanging Rock ¹	95	48	69.4	4.91	Corvallis ¹	89	36	56.2	0.60
Harbor	89	49	69.0	2.24	Corvallis ¹ b ¹	78	52	60.8	0.47
Hedges	92	43	67.1	2.30	Corvallis (near)	85	38	58.0	0.60
Hillhouse	95	45	68.9	1.69	Crook	82	25	50.6	0.06
Hillsboro	96	46	71.2	2.34	East Portland ¹	81	38		

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Oregon—Cont'd.</i>	°	°	°	Ins.	<i>Pennsylvania—Con.</i>	°	°	°	Ins.
Eugene.....	89	39	56.9	1.12	Salisbury.....	90	46	72.0	4.19
Gardiner.....	90	44	57.0	2.99	Seisholtzville.....	90	46	72.0	4.44
Glenora.....	94	32	53.4	5.64	Selins Grove.....	94	49	70.6	3.68
Grants Pass a f.....	95	32	59.4	1.87	Skippack.....	91	38	65.9	5.08
Grants Pass b *.....	93	37	60.8	1.72	Smethport.....	93	44	67.1	2.02
Heppner.....	84	37	56.7	0.12	Smiths Corners.....	91	46	68.2	2.98
Hood River (near).....	82	36	54.0	0.50	Somerset.....	92	46	68.6	3.94
Hubbard.....	84	41	57.2	1.40	South Eaton.....	90	47	70.2	4.82
Jacksonville.....	88	35	59.2	1.61	Stoyestown.....	92	46	68.6	3.28
Joseph.....	78	28	51.8	0.15	Uniontown.....	90	47	70.2	2.34
Juniper City *.....	88	50	61.3	0.24	Warren.....	92	44	63.8	1.42
Lafayette.....	88	50	63.1	0.54	Wellsboro * f.....	95	51	70.8	2.77
La Grande.....	85	37	59.2	0.07	West Chester.....	95	53	69.4	1.30
Lakeview.....	87	25	56.4	0.07	West Newton.....	96	42	71.2	1.43
Langlois.....	90	38	58.8	2.04	Wilkesbarre.....	96	44	69.2	2.65
Leland.....	94	43	60.1	1.70	York.....	98	50	71.0	2.50
McMinnville a f.....	84	37	56.6	1.12	<i>Rhode Island.</i>				
Monmouth.....	86	52	64.3	0.22	Bristol.....	92	47	63.4	2.26
Mount Angel.....	90	40	56.8	1.66	Kingston.....	92	46	61.9	3.92
Newberg.....	85	41	57.2	1.09	Lonsdale.....	92	49	66.8	2.48
New Bridge.....	92	38	65.0	0.20	Olneyville.....	93	47	65.0	2.39
Newport.....	86	25	49.9	3.09	Pawtucket.....	96	52	67.3	3.59
Oregon City.....	88	32	59.7	0.30	Providence a.....	96	45	65.4	3.84
Pendleton.....	88	32	59.7	0.30	Providence b.....	92	49	66.8	2.77
Portland.....	84	50	61.7	1.45	Providence c.....	92	49	66.8	2.77
Riddles.....	96	38	56.6	1.17	<i>South Carolina.</i>				
Roseburg.....	94	45	62.2	0.62	Allendale.....	95	60	78.2	8.61
Salem a.....	92	50	57.9	0.55	Anderson.....	92	61	75.6	12.05
Salem b.....	87	38	57.8	1.24	Batesburg.....	92	61	75.6	8.69
Sheridan.....	90	50	61.9	0.68	Blackburg.....	92	58	78.4	6.07
Silverton.....	88	50	61.9	1.78	Blackville.....	92	59	75.7	7.55
Siskiyou.....	85	39	57.8	0.00	Brewer Mine.....	92	59	75.7	7.55
Sparta.....	80	30	54.1	0.00	Camden.....	94	56	76.3	2.11
Springfield.....	89	49	61.2	0.67	Cheraw a.....	94	56	76.3	2.11
The Dalles.....	90	42	61.8	0.06	Cheraw b.....	94	56	76.3	2.11
Tillamook R'k L.H.....	90	42	61.8	0.06	Connors.....	94	56	76.3	2.11
Umatilla.....	92	32	61.6	0.03	Effingham.....	93	55	73.9	6.07
Vale.....	92	32	61.6	0.03	Evergreen.....	93	55	73.9	6.07
Vernonia.....	82	42	55.0	1.92	Flint Hill.....	92	57	75.4	4.89
West Fork.....	98	40	59.4	1.00	Florence.....	95	60	78.4	12.61
Weston.....	86	35	58.0	0.28	Georgetown.....	86	54	71.4	6.66
<i>Pennsylvania.</i>					Greenwood.....	92	62	77.2	5.56
Altoona.....	94	53	73.6	2.94	Hardeeville.....	93	61	77.2	8.08
Aqueduct.....	100	52	72.4	3.83	Kingstreet.....	94	54	77.1	7.57
Blooming Grove.....	100	54	68.5	1.20	Kitchings Mills.....	95	53	67.8	5.31
Bloomsburg.....	96	45	70.8	2.93	Longshore.....	93	58	76.0	5.30
Blue Knob.....	91	54	69.7	2.49	McCormick.....	94	58	75.5	3.32
Brookville.....	92	43	64.3	2.22	Marion.....	93	58	75.7	6.22
Browers Lock.....	100	48	69.3	3.42	Martins.....	92	57	75.4	10.65
Carlisle.....	100	48	69.3	3.42	Mount Carmel.....	92	57	75.4	4.74
Chambersburg.....	92	48	72.4	1.80	Nichols.....	92	57	75.4	5.61
Clarion.....	92	48	72.4	1.80	Pinopolis.....	85	66	73.0	11.72
Coatesville.....	98	50	70.2	3.93	Port Royal.....	92	69	80.6	8.64
Confluence.....	92	49	68.3	2.86	Saint Georges.....	92	56	75.7	7.88
Coopersburg.....	93	49	68.3	2.86	Saint Matthews.....	93	63	77.6	8.38
Corry.....	97	42	67.3	2.98	Saint Stephens.....	91	64	75.2	10.65
Davis Island Dam.....	93	49	68.3	2.98	Sedalia.....	93	59	76.6	6.36
Doylstown.....	94	38	64.1	4.10	Simpsonville.....	91	58	74.8	5.55
Drift.....	94	38	64.1	4.10	Spartanburg.....	92	60	74.7	7.27
Du Bois.....	95	40	66.0	3.06	Statesburg.....	89	62	74.6	8.24
East Mauch Chunk.....	99	44	69.6	1.54	Tillers Ferry.....	88	68	78.2	7.26
Easton.....	97	49	70.2	1.66	Trial.....	91	56	76.3	10.67
Edinboro.....	86	50	68.0	4.83	Vance.....	92	57	75.6	8.76
Emporium.....	93	44	68.3	4.83	Wateree.....	92	57	75.6	5.61
F'ks of Neshami'y.....	93	44	68.3	4.83	Watts.....	92	57	75.6	5.61
Frederick.....	93	44	68.3	4.83	Yorkville.....	89	57	74.6	7.05
Frederick.....	93	44	68.3	4.83	Youngs Island.....	96	59	80.3	7.35
Frederick.....	93	44	68.3	4.83	<i>South Dakota.</i>				
Frederick.....	93	44	68.3	4.83	Aberdeen.....	104	42	70.4	1.29
Frederick.....	93	44	68.3	4.83	Alexandria.....	97	42	71.0	1.52
Frederick.....	93	44	68.3	4.83	Bear Valley.....	101	44	66.6	1.19
Frederick.....	93	44	68.3	4.83	Bowdle.....	95	48	70.5	2.73
Frederick.....	93	44	68.3	4.83	Brookings.....	93	41	70.0	1.54
Frederick.....	93	44	68.3	4.83	Carthage.....	95	31	67.2	1.02
Frederick.....	93	44	68.3	4.83	Castlewood.....	95	31	67.2	1.02
Frederick.....	93	44	68.3	4.83	Cross.....	95	31	67.2	1.02
Frederick.....	93	44	68.3	4.83	De Smet.....	95	42	71.2	1.29
Frederick.....	93	44	68.3	4.83	Faulkton.....	100	42	69.0	2.13
Frederick.....	93	44	68.3	4.83	Flandreau.....	96	40	69.4	1.36
Frederick.....	93	44	68.3	4.83	Forestburg.....	95	43	70.6	0.70
Frederick.....	93	44	68.3	4.83	Fort Meade.....	105	41	69.2	1.63
Frederick.....	93	44	68.3	4.83	Fort Sully.....	104	45	73.9	2.80
Frederick.....	93	44	68.3	4.83	Frankfort.....	99	40	69.8	3.16
Frederick.....	93	44	68.3	4.83	Gale.....	97	45	71.8	2.32
Frederick.....	93	44	68.3	4.83	Highmore.....	99	37	70.8	2.55
Frederick.....	93	44	68.3	4.83	Hitchcock.....	99	37	70.8	2.55
Frederick.....	93	44	68.3	4.83	Hotchkiss.....	104	36	71.8	2.47
Frederick.....	93	44	68.3	4.83	Kimball.....	100	42	71.8	2.47
Frederick.....	93	44	68.3	4.83	Mellette.....	98	48	71.5	0.95
Frederick.....	93	44	68.3	4.83	Midland.....	108	38	73.1	2.23
Frederick.....	93	44	68.3	4.83	Oelrichs.....	110	35	73.2	1.80
Frederick.....	93	44	68.3	4.83	Parkston.....	96	36	65.9	1.44
Frederick.....	93	44	68.3	4.83	Piedmont.....	96	36	65.9	1.44
Frederick.....	93	44	68.3	4.83	Plankinton.....	95	44	69.7	2.60
Frederick.....	93	44	68.3	4.83	Rosebud.....	106	38	70.4	1.69
Frederick.....	93	44	68.3	4.83	Salem.....	93	41	75.0	0.36
Frederick.....	93	44	68.3	4.83	Sioux Falls.....	93	41	75.0	0.36
Frederick.....	93	44	68.3	4.83	Spearfish.....	105	43	67.7	2.13

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>S. Dakota—Cont'd.</i>	°	°	°	Ins.	<i>Texas—Cont'd.</i>	°	°	°	Ins.
Tyndall.....	98	49	73.8	1.69	Laredo.....	96	62	83.6	1.02
Watertown.....	97	49	73.8	1.38	Llano * f.....	96	62	83.6	0.16
Webster.....	98	38	71.2	2.34	Longview.....	100	60	80.6	2.64
Wentworth.....	94	40	67.2	2.20	Luling.....	99	62	81.0	0.17
Wessington.....	97	45	71.4	0.93	McGregor.....	96	53	69.8	2.88
Wessington Sp'gs.....	97	45	71.4	2.19	Marshall.....	97	60	79.6	9.00
Whitewood.....	95	48	69.4	1.71	Menardville * f.....	99	65	78.7	1.27
Wolsey.....	95	48	69.4	1.71	Mesquite.....	97	61	78.0	5.41
<i>Tennessee.</i>					Mountain Spring.....	100	58	78.4	1.32
Andersonville.....	90	55	73.1	4.60	New Braunfels.....	96	59	79.6	0.55
Arlington.....	94	56	75.4	1.94	Orange.....	94	64	80.0	9.74
Ashwood.....	77	57	74.6	5.60	Panther * f.....	108	70	83.7	1.11
Bethel Springs.....	89	60	70.9	3.50	Paris.....	97	59	78.8	5.47
Bolivar.....	92	54	73.0	3.75	Quana.....	107	50	80.6	3.00
Byrdstown.....	87	63	72.7	4.49	Rio Grande City.....	111	53	80.2	0.64
Carthage.....	94	56	75.4	1.94	Rockport.....	92	70	81.3	.....
Charleston.....	88	56	79.4	4.21	Round Rock.....	100	60	82.2	2.36
Clarksville.....	88	56	79.4	4.21	San Antonio.....	95	62	80.7	1.82
Clinton.....	94	56	79.4	4.21	San Marcos.....	95	62	80.7	1.82
Columbia.....	94	56	79.4	4.21	Sherman.....	94	62	79.6	4.95
Covington.....	89	58	74.5	2.58	Sierra Blanca.....	103	50	79.6	0.00
Covington.....	98	51	77.2	3.17	Silver Falls.....	108	52	79.5	1.39
Dyersburg.....	94	50	75.8	1.84	Stella.....	91	70	80.2	4.15
Florence Station.....	88	64	74.9	4.30	Sulphur Springs.....	103	56	80.2	1.93
Franklin.....	91	54	74.2	3.06	Temple.....	93	61	78.8	1.79
Greeneville.....	84	58	69.6	3.69	Tyler.....	97	60	78.6	4.58
Harriman.....	102	54	76.7	4.91	Waco.....	96	60	80.4	1.58
Harrogate.....	86	54	71.0	3.37	Weatherford.....	104	56	83.0	2.27
Hohenwald.....	94	52	74.9	1.72	<i>Utah.</i>				
Jackson.....	88	54	70.2	5.83	Beaver.....	88	34	62.2	0.00
Jackson.....	92	63	75.3	2.50	Blue Creek.....	98	52	74.6	0.00
Johnson City.....	90	55	72.4	3.44	Castle Gate.....	98	33	67.5	0.17
Johnsonville.....	90	55	72.4	3.44	Cisco.....	102	39	73.0	T.
Kingston.....	90	55	72.4	3.44	Corinne.....	98	50	76.1	0.10
Lookout Mount.....	85	55	67.9	4.39	Deseret.....	91	36	64.6	0.00</

Meteorological record of voluntary observers, &c.—Continued.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Virginia—Cont'd.</i>	°	°	°	In.	<i>Wisconsin.</i>	°	°	°	In.
Richmond b†	87	57	72.0	2.49	Amherst	93	38	67.4	2.65
Riverton†	87	57	72.0	4.15	Ashland†	93	33	65.2	1.99
Salem†	87	57	72.0	4.16	Baraboo†	91	50	69.0	2.56
Saluda†	93	50	73.5	2.45	Barron†	94	40	67.6	1.25
Spottsville†	93	48	74.0	3.98	Bayfield	92	33	62.8	2.68
Standardville†	91	56	72.2	3.47	Beaver Dam	89	45	70.0	2.89
Stanton†	92	50	69.6	3.89	Belleville	91	46	68.0	3.68
Stephens City†	99	51	74.2	3.99	Beloit†	91	50	70.0	4.34
Warsaw†	95	54	73.4	1.93	Black River Falls†	96	45	69.6	1.78
Wadsworth†	95	54	73.4	2.85	Cadiz†	96	45	68.8	2.26
<i>Washington.</i>					Centralia	97	46	69.7	1.89
Aberdeen†	88	40	54.0	5.10	Chippewa Falls†	97	46	69.7	1.99
Anacortes	89	37	56.6	1.56	Columbus	94	40	70.0	3.07
Bridgeport†	84	40	63.4	0.20	Crandon†	100	42	67.7	0.92
Centerville†	89	36	55.0	0.19	Depere†	89	42	67.6	2.73
Chehalis†	88	38	55.4	2.39	Eau Claire	95	46	70.0	0.66
Chelan†	86	41	61.2	0.21	Florence†	94	40	67.3	1.57
Colfax†	79	35	56.1	0.62	Fond du Lac†	92	44	68.6	2.10
Davenport†	84	30	57.6	0.31	Grantsburg†	97	42	68.4	2.30
Dayton†	88	35	59.8	0.36	Harvey†	92	47	67.7	3.05
East Sound†	78	46	57.8	1.30	Hayward†	99	43	69.0	1.25
Elbe	89	38	56.6	3.54	Hillboro	92	45	67.6	2.16
Ferry†	89	38	56.6	3.01	Janesville	89	40	67.9	2.50
Fort Simcoe	80†	37†	57.8†	0.11	Juneau†	92	46	68.8	3.98
Fort Spokane	84	35	59.4	0.65	Koepenick†	96	50	71.9	2.59
Fort Townsend†	84	40	62.6	1.31	Lancaster†	92	53	70.6†	1.30
Madrona†	86	42	64.4	1.80	Lincoln†	92	49	68.9	2.20
Moxee Valley†	87	35	62.1	0.12	Madison†	92	49	68.9	6.69
Oiga†	80	45	55.5	1.73	Manitowish†	84	42	62.2	1.37
Pine Hill†	83	48	59.4	0.16	Meadow Valley†	97	40	70.4	1.37
Pomeroy†	81	44	61.0	0.13	Medford†	95	42	67.8	1.95
Pullman†	79	31	55.2	0.13	Medford a†	95	42	67.8	1.95
Rosalia†	78	33	54.5	0.49	Menomonie†	100	49	69.6	1.54
Silver Creek†	86	40	55.0	3.50	Neillsville†	94	42	68.9	2.06
Tacoma†	89	40	56.6	2.31	New Holstein†	93	40	68.6	1.74
Union City†	80	45	56.8	3.39	Oconomowoc†	89	46	68.2	4.46
Waterville†	82	33	56.0	0.23	Oconto†	91	39	66.9	0.89
<i>West Virginia.</i>					Osceola†	99	38	71.8	2.68
Bluefield†	87	48	66.2	6.41	Oshkosh†	90	48	69.2	1.65
Buckhannon a†	88	47	68.4	2.72	Pepin	95	45	70.8	1.58
Buckhannon b†	88	47	68.4	2.72	Portage†	95	47	71.0	2.45
Central Station†	94	50	77.0	4.18	Prairie du Chien	96	47	71.0	2.45
Charleston a†	88	40	63.0	2.82	Raymond	89	44	66.6	3.93
Davis†	88	40	63.0	2.82	Reedsburg†	92	48	68.6	1.39
Elkhorn†	88	49	69.4	5.23	Sharon†	90	47	67.5	4.22
Ellis†	92	53	70.2	3.53	Shawano	92	41	67.4	1.04
Fairmont†	89	50	70.0	4.18	Shell Lake	98	43	70.2	2.39
Glenville†	89	50	70.0	4.18	Sparta b†	95	39	69.2	1.09
Grafton†	90	49	69.8	4.05	Stevens Point†	94	49	69.2	1.64
Harpers Ferry†	89	49	69.8	4.05	Valley Junction†	92	44	67.2	0.97
Hinton†	89	49	69.8	4.05	Viroqua	89	49	68.0	1.26
Kingwood†	90	45	65.2	2.54	Watertown†	91	49	64.8	3.66
Marlinton†	87	46	67.2	5.80	Waukesha†	92	46	68.9	1.90
Martinsburg†	95	54	71.0	1.83	Westfield†	92	46	68.9	1.90
Morgantown a†	99	46	71.6	1.94	Weston†	94	40	71.4	2.84
Morgantown b†	99	46	71.6	1.94	Whitehall†	96	44	70.8	0.55
New Cumberland	95	50	73.0	4.13	<i>Wyoming.</i>				
New Martinsville†	92	54	73.0	4.11	Big Horn Ranch†	82	27	53.2	1.51
Nuttallburg†	93	53	73.0	3.01	Camp Pilot Butte	92	30	62.2	0.40
Phillippi†	93	53	73.0	3.01	Fort McKinney	94	36	62.6	0.79
Pleasant Hill†	90	50	68.0	3.82	Fort Washakie	90	33	61.1	0.62
Point Pleasant†	95	54	73.7	5.70	Fort Yellowstone	80	22	54.6	0.36
Rowlesburg†	95	54	73.7	5.70	Lander	88	32	62.2	1.06
Spencer†	98	48	72.0	3.85	Laramie b	85	28	57.2	0.54
Tannery†	90	52	69.8	3.85	Lusk†	96	30	62.6	0.89
Weston a†	89	54	71.8	5.23	Saratoga†	85	31	58.2	0.80
Weston b†	89	54	71.8	5.23	Sheridan	94	32	61.4	0.88
Wheeling a†	93	56	74.9	4.67	Sundance	96	34	62.1	1.75
Wheeling b†	93	56	74.9	4.67	Wheatland†	108	36	66.2	0.10

Reports received too late to be used in general discussion of weather for June, 1893.

<i>Alabama.</i>					<i>New Mexico.</i>				
Carrollton†	76.4	3.94			Monero†	92	24	60.4	0.02
Elba†	75.7	5.43			<i>New York.</i>				
Uniontown	93	63	77.9	4.30	Central Park, N. Y.†	95	54	68.1	2.59
<i>California.</i>					Watkins†	93	49	68.9	2.41
Milton (near)†	97	54	71.1	0.00	<i>North Dakota.</i>				
Tehachapi b	92	41	63.4	0.00	Willow City†	93	37	63.4	3.28
Tulare c	110	46	74.9	0.00	<i>Ohio.</i>				
<i>Idaho.</i>					Bladensburg	93	37	63.4	3.28
Garden Valley†	94	33	59.0	T.	<i>Oregon.</i>				
Lake†	90	20	54.0	0.58	Happy Valley†	86	28	54.6	T.
<i>Illinois.</i>					Toledo	92	35	55.8	2.67
Rockford†	89	51	69.6	4.51	<i>South Dakota.</i>				
<i>Indiana.</i>					Ashcroft†	102	35	65.0	1.47
Markle†	95	44	71.6	2.30	<i>Tennessee.</i>				
<i>Louisiana.</i>					Brownsville†	95	30	67.4	5.17
Hamburg†	93	64	79.7	5.02	<i>Virginia.</i>				
<i>Massachusetts.</i>					Wytheville†	82	50	67.4	5.17
Taunton a†	97	43	66.6	2.57	<i>Washington.</i>				
Wayland	96	40	65.5	2.44	Ruby†	80	36	56.2	2.63
Webster	96	40	65.5	2.44	<i>Mexico.</i>				
<i>Nebraska.</i>					Leon de Aldamas†	90	56	70.0	7.37
De Soto†	96	54	74.4	3.18	Puebla†	85	55	65.7	1.58
<i>Nevada.</i>					<i>West Indies.</i>				
Golconda†	102	46	67.7	0.05	Grand Turk Island	81	68	76.0	0.71
Toano b	92	50	65.6	0.00	Hamilton, Ber.	81	68	76.0	7.05

Received too late for publication in May, 1893.

Stations.	Temperature. (Fahrenheit.)			Precip'n.	Stations.	Temperature. (Fahrenheit.)			Precip'n.
	Max.	Min.	Mean			Max.	Min.	Mean	
<i>Alabama.</i>	°	°	°	In.	<i>Nevada.</i>	°	°	°	In.
Tuscaloosa†	63	32	47.0	5.35	Toano b	75	28	47.4	0.00
<i>Alaska.</i>					<i>New Mexico.</i>				
Killianoo†	63	32	47.0	5.35	Estalina Springs	86	34	57.2	1.02
<i>Arizona.</i>					Fort Wingate	86	34	57.2	1.25
Bisbee†	91	41	66.3	0.52	<i>North Carolina.</i>				
<i>California.</i>					Warrenton	75	28	47.4	4.71
Aptos†	75	48	58.8	0.42	<i>Ohio.</i>				
Napa City a†	87	44	62.0	0.33	Mountville	75	25	46.8	3.78
Pt. Hueneme L. H.	87	44	62.0	0.33	<i>Oregon.</i>				
Point Lobos	68	44	54.2	0.19	Aurora (near)	76	32	53.2	3.80
Roe Island L. H.	68	44	54.2	0.19	Joseph†	75	25	46.8	1.29
Tulare a	68	44	54.2	0.19	<i>South Dakota.</i>				
Verba Buena L. H.	68	44	54.2	0.19	Carthage	75	25	46.8	0.98
<i>Colorado.</i>					<i>Texas.</i>				
Box Elder	76	17	46.0	0.00	Ochiltree†	107	35	79.4	5.25
Idaho Springs†	76	17	46.0	0.00	Quana†	94	44	73.0	1.53
Surface Creek†	86	38	57.2	0.00	<i>West Indies.</i>				
<i>Idaho.</i>					Grand Turk Island	81	68	76.0	0.77
Martin†	74	21	44.0	0.85					
<i>Kansas.</i>									
Elk City†	88	42	64.9	2.94					

*Extremes of temperature from observed readings of dry thermometer.

†Weather Bureau instruments.

A numeral following the name of a station indicates the hours of observation from which the mean temperature was obtained, thus:

1 Mean of 7 a. m. + 2 p. m. + 9 p. m. + 9 p. m. + 4.

2 Mean of 8 a. m. + 8 p. m. + 2.

3 Mean of 7 a. m. + 7 p. m. + 2.

4 Mean of 6 a. m. + 6 p. m. + 2.

5 Mean of 7 a. m. + 2 p. m. + 2.

6 Mean from readings at various hours reduced to true daily mean by special tables.

7 Mean from hourly readings of thermograph.

8 Mean of 7 a. m. + 2 p. m. + 9 p. m. + 3.

The absence of a numeral indicates that the mean temperature has been obtained from daily readings of the maximum and minimum thermometers.

An italic letter following the name of a station, as "Livingston a," "Livingston b," indicates that two or more observers, as the case may be, are reporting from the same station. A small Roman letter following the name of a station, or in figure columns, indicates the number of days missing from the record; for instance, "a" denotes 14 days missing.

No note is made of breaks in the continuity of temperature records when the same do not exceed two days. All known breaks, of whatever duration, in the precipitation record receive appropriate notice.

Corrections: Colorado, Deer Trail, May, 1893, make precipitation 3.84 instead of 3.25. Indiana, Angola, May, 1893, make precipitation 2.52 instead of 2.72. Nevada, Palisade, May, 1893, make mean temperature 49.9 instead of 59.9.

NOTE.—The following changes have been made in names of stations: South Carolina, Winnsboro, changed to Flint Hill.

Data from Canadian stations for the month of June, 1893.

	<i>Inches.</i>	<i>Inches.</i>	<i>Inches.</i>	°	°	<i>Inches.</i>	<i>Inches.</i>	
Saint John's, N. F.	29.78	29.93	-.04	48.6	-2.8	4.27	—	ne.
Sydney, N. S.	29.92	29.98	+ .05	56.7	+ 2.2	0.78	— 2.91	sw.
Grindstone, G. S. L.	29.92	29.95	.....	53.0	.....	0.52	.....	sw.
Sandy Point, N. F.	29.91	29.93	.....	52.0	.....	0.49	.....	nw.
Halifax, N. S.	29.92	30.05	+ .11	57.8	+ 0.3	1.76	— 2.14	sw.
Grand Manan, N. B.	29.97	30.02	.....	56.7	.....	2.13	— 0.17	se.
Yarmouth, N. S.	29.96	30.04	+ .11	55.4	+ 0.4	3.05	+ 1.51	se.
Saint Andrews, N. B.	29.94	29.99	.....	57.5	.....	1.65	— 1.42	se.
Charlottetown, P. E. I.	29.97	30.01	.....	58.3	.....	0.47	— 2.26	sw.
Chatham, N. B.	29.98	30.00	+ .10	61.0	+ 3.0	0.75	— 3.54	sw.
Father Point, Que.	29.94	29.97	+ .11	55.1	+ 2.1	0.85	— 1.84	w.
Quebec, Que.	29.66	29.98	+ .09	63.8	+ 3.3	4.31	+ 1.04	ne.
Montreal, Que.	29.76	29.96	+ .06	67.4	+ 2.9	5.01	+ 1.82	se.
Rockliffe, Ont.	29.42	29.91	+ .01	65.4	+ 7.4	5.25	+ 2.50	se.
Kingston, Ont.	29.65	29.96	+ .02	65.4	+ 3.4	2.50	+ 0.10	sw.
Toronto, Ont.	29.60	29.97	+ .01	66.1	+ 4.6	1.84	— 0.88	nw.
White River, Ont.	28.60	29.91	.....	63.5	.....	4.35	.....	sw.
Port Stanley, Ont.	29.36	29.98	+ .03	65.8	.....	2.27	— 0.75	e.
Saugeen, Ont.	29.26	29.96	+ .02	64.8	+ 6.8	1.64	— 0.73	se.
Parry Sound, Ont.	29.28	29.95	+ .02	65.0	.....	3.37	+ 1.16	w.
Port Arthur, Ont.	29.16	29.84	— .67	68.0	+ 6.4	3.68	+ 1.17	ne.
Winnipeg, Man.	29.67	29.78	— .07	65.4	+ 3.9	3.87	+ 0.03	sw.
Minnedosa, Man.	28.00	29.75	— .07	62.8	+ 3.3	1.55	— 2.24	w.
Qu'Appelle, Assiniboa.	27.58	29.79	— .03	58.8	— 2.2	3.50	+ 0.15	nw.
Medicine Hat, Assiniboa	27.56	29.81	+ .03	59.8	— 3.7	2.25	— 0.76	w.
Swift Current, Assiniboa	27.31	29.83	+ .01	59.2	+ 1.2	1.04	— 2.51	sw.
Calgary, Alberta	26.36	29.86	+ .01	53.2	— 3.3	1.11	— 1.23	w.
Prince Albert, Sask.	28.26	29.73	.....	59.1	.....	1.71	.....	w.
Edmonton, Alberta	27.51	29.75	.....	54.3	— 2.3	3.22	+ 1.03	nw.
Battleford, Saskatchew'n	28.06	29.75	.....	58.2	.....	4.81	.....	w.
Spences Bridge, B. C.	29.12	29.93	.....	59.7	.....	0.39	.....	sw.
Hamilton, Bermuda	29.96	30.12	.....	75.8	.....	8.33	.....	sw.
Lat. May, 1893.								
Hamilton, Bermuda	29.92	30.08	+ .02	70.4	.....	8.57	.....	sw.
Sandy Point, N. F.	29.85	29.87	.....	43.0	.....	0.32	.....	se.

Table of miscellaneous meteorological data for June, 1893—Weather Bureau observations—Continued.

Districts and stations.	Elevation above sea-level, feet.	Length of record, years.	Pressure, in inches.			Temperature of the air, in degrees Fahrenheit.					Humidity and precipitation.					Wind.				Mean temperature data since opening of station.												
			Mean pressure, 8 a. m. and 8 p. m. + 2.	Mean reduced.	Departure from normal.	Mean max. and min. + 2.	Departure from normal.	Maximum.	Date.	Minimum.	Date.	Greatest daily range.	Mean temperature of the dew-point.	Mean relative humidity, per cent.	Precipitation, in inches.	Departure from normal.	Days with .01 or more.	Total movement, miles.	Prevailing direction.	Maximum velocity.			Clear days.	Partly cloudy days.	Cloudy days.	Average cloudiness, tenths.	Highest for month.	Year.	Lowest for month.	Year.		
																				Miles per hour.	Direction.	Date.										
Ex. Northwest—Con.																																
Fort Buford.....	1,899	15	27.84	29.80	— .04	72.8	71.3	93	13	76	43	16	51	39	46	57	1.84	— 1.4	17	6,855	W.	56	W.	23	11	5	14	5.5	69.5	1884	57.6	1891
Upper Miss. Valley.																																
Minneapolis.....	758	23	29.11	29.90	— .00	71.9	71.3	92	12	82	46	6	62	32	64	57	1.83	— 1.2	8	6,379	W.	50	W.	21	14	17	4	4.0	77.0	1873	63.3	1875
Red Wing.....	750	21	29.12	29.90	— .00	71.9	71.3	92	12	82	46	6	62	31	64	57	1.83	— 1.2	8	6,379	W.	50	W.	21	14	17	4	4.0	77.0	1873	63.3	1875
Saint Paul.....	850	23	29.02	29.90	— .00	71.4	71.4	91	12	81	47	6	62	27	60	56	2.31	— 2.5	7	5,519	W.	34	W.	18	13	8	9	4.5	73.7	1873	67.0	1889
La Crosse.....	720	21	29.19	29.94	— .01	71.8	71.8	92	12	82	47	6	63	26	61	56	3.32	— 3.5	12	5,500	W.	28	W.	21	10	11	9	4.2	73.7	1873	67.0	1889
Davenport.....	613	22	29.29	29.93	— .03	73.0	73.0	93	12	82	47	6	63	26	61	56	3.32	— 3.5	12	5,500	W.	28	W.	21	10	11	9	4.2	73.7	1873	67.0	1889
Des Moines.....	869	15	29.03	29.94	— .02	71.4	71.4	91	13	81	47	6	63	26	61	56	4.49	— 4.6	10	3,250	W.	33	W.	11	12	7	11	4.9	73.2	1890	66.2	1889
Dubuque.....	651	20	29.26	29.94	— .02	71.8	71.8	92	12	82	47	6	63	26	61	56	5.49	— 5.6	10	3,250	W.	33	W.	11	12	7	11	4.9	73.2	1890	66.2	1889
Keokuk.....	613	22	29.31	29.95	— .01	73.3	73.3	92	12	82	47	6	63	26	61	56	2.37	— 2.6	10	3,250	W.	33	W.	11	12	7	11	4.9	73.2	1890	66.2	1889
Cairo.....	359	22	29.61	29.99	— .02	74.4	74.4	93	11	83	48	6	64	21	61	56	7.59	— 7.7	11	4,639	W.	36	W.	4	10	15	5	5.7	79.4	1890	70.8	1889
Springfield, Ill.....	644	14	29.30	29.97	— .00	72.8	72.8	92	12	82	47	6	63	27	61	56	1.99	— 1.9	11	5,338	W.	40	W.	4	10	15	5	5.0	76.0	1890	67.7	1889
Hannibal.....	534	23	29.39	29.95	— .01	72.8	72.8	92	12	82	47	6	63	28	64	70	5.49	— 5.6	13	6,573	W.	48	W.	21	15	11	4	3.5	79.7	1871	70.6	1889
Saint Louis.....	571	23	29.37	29.97	— .01	71.9	71.9	93	12	82	47	6	63	28	64	70	5.49	— 5.6	13	6,573	W.	48	W.	21	15	11	4	3.5	79.7	1871	70.6	1889
Missouri Valley.																																
Columbia.....	993	5	28.95	29.94	— .01	72.8	72.8	93	21	84	49	6	62	28	62	62	6.83	— 7.0	13	3,775	W.	32	W.	19	13	5	4	4.1	77.0	1890	70.8	1889
Kansas City.....	1,356	23	28.96	29.90	— .01	71.8	71.8	93	21	82	48	6	62	25	62	73	5.06	— 5.2	14	4,840	W.	27	W.	21	8	19	3	4.6	75.6	1890	69.0	1889
Springfield, Mo.....	857	23	29.06	29.90	— .03	73.2	73.2	93	21	83	52	6	63	25	62	71	5.64	— 5.8	13	5,421	W.	45	W.	23	8	13	9	5.9	77.0	1890	70.0	1878
Topeka.....	7	7	28.78	29.93	— .00	73.3	73.3	93	21	84	53	5	64	29	61	56	7.11	— 7.3	11	5,399	W.	30	W.	18	10	18	2	3.0	75.8	1890	66.7	1878
Omaha.....	1,113	23	28.78	29.93	— .00	73.3	73.3	93	21	84	53	5	64	29	61	56	7.11	— 7.3	11	5,399	W.	30	W.	18	10	18	2	3.0	75.8	1890	66.7	1878
Valentine.....	1,165	23	28.78	29.93	— .00	73.3	73.3	93	21	84	53	5	64	29	61	56	7.11	— 7.3	11	5,399	W.	30	W.	18	10	18	2	3.0	75.8	1890	66.7	1878
Sioux City.....	1,470	23	28.78	29.93	— .00	73.3	73.3	93	21	84	53	5	64	29	61	56	7.11	— 7.3	11	5,399	W.	30	W.	18	10	18	2	3.0	75.8	1890	66.7	1878
Pierre.....	1,310	12	28.45	29.83	— .07	70.2	70.2	93	11	84	44	6	64	25	61	56	0.67	— 0.6	4	11,445	W.	59	W.	7	14	2	2	3.6	70.2	1893	63.2	1892
Huron.....	1,232	20	28.59	29.86	— .04	69.8	69.8	93	11	83	44	6	64	25	61	56	1.78	— 1.7	7	7,718	W.	47	W.	7	17	6	7	3.6	72.8	1873	64.6	1877
Northern Slope.																																
Havre.....	2,477	11	27.28	29.84	— .02	69.3	69.3	93	10	72	36	29	46	45	43	57	1.20	— 1.1	12	7,132	W.	41	SW.	25	8	19	3	5.3	65.4	1886	58.0	1891
Miles City.....	2,374	16	27.37	29.79	— .02	69.3	69.3	93	10	72	36	29	46	45	43	57	1.20	— 1.1	12	7,132	W.	41	SW.	25	8	19	3	5.3	65.4	1886	58.0	1891
Helena.....	4,118	14	25.77	29.92	— .02	68.0	68.0	93	10	72	36	29	46	45	43	57	1.20	— 1.1	12	7,132	W.	41	SW.	25	8	19	3	5.3	65.4	1886	58.0	1891
Rapid City.....	3,250	9	26.53	29.80	— .02	68.0	68.0	93	10	72	36	29	46	45	43	57	1.20	— 1.1	12	7,132	W.	41	SW.	25	8	19	3	5.3	65.4	1886	58.0	1891
Chesapeake.....	6,103	23	24.02	29.82	— .04	62.2	62.2	93	11	78	32	3	47	42	33	37	1.05	— 0.9	3	9,251	W.	42	W.	15	18	10	2	1.8	60.6	1893	74.9	1889
Lander.....	5,377	23	24.00	29.82	— .04	62.2	62.2	93	11	78	32	3	47	42	33	37	1.05	— 0.9	3	9,251	W.	42	W.	15	18	10	2	1.8	60.6	1893	74.9	1889
Kearney.....	2,206	19	27.02	29.89	— .01	70.4	70.4	93	11	82	45	5	57	38	53	61	1.11	— 0.8	12	8,142	W.	48	W.	13	16	2	4	2.0	70.9	1881	64.3	1891
North Platte.....	3,841	19	27.02	29.89	— .01	70.4	70.4	93	11	82	45	5	57	38	53	61	1.11	— 0.8	12	8,142	W.	48	W.	13	16	2	4	2.0	70.9	1881	64.3	1891
Middle Slope.																																
Colorado Springs.....	6,096	13	24.02	29.88	— .00	64.1	64.1	93	20	79	34	5	49	45	35	41	0.40	— 0.4	7	7,060	W.	60	W.	26	14	13	3	3.7	68.9	1874	61.8	1878
Denver.....	5,287	22	24.73	29.84	— .00	68.6	68.6	93	20	83	38	6	54	41	37	38	0.13	— 1.2	6	5,250	W.	45	W.	26	16	10	4	3.7	71.2	1881	63.2	1878
Pikes Peak.....	16	16	17.96	29.82	— .00	35.4	35.4	93	20	43	40	6	55	45	31	32	0.57	— 0.6	8	5,919	W.	54	W.	26	14	14	2	3.3	71.2	1893	66.5	1891
Pueblo.....	4,734	5	25.21	29.82	— .00	71.2	71.2	93	20	83	38	6	54	41	37	38	0.13	— 1.2	6	5,250	W.	45	W.	26	16	10	4	3.7	71.2	1881	63.2	1878
Concordia.....	1,410	9	26.47	29.81	— .00	74.0	74.0	93	20	83	38	6	54	41	37	38	0.13	— 1.2	6	5,250	W.	45	W.	26	16	10	4	3.7	71.2	1881	63.2	1878
Dodge City.....	3,523	19	27.32	29.86	— .02	75.8	75.8	93	20	83	38	6	54	41	37	38	0.13	— 1.2	6	5,250	W.	45	W.	26	16	10	4	3.7	71.2	1881	63.2	1878
Wichita.....	1,306	5	28.4																													



Chart I. Tracks of areas of Low Pressure. June, 1893.



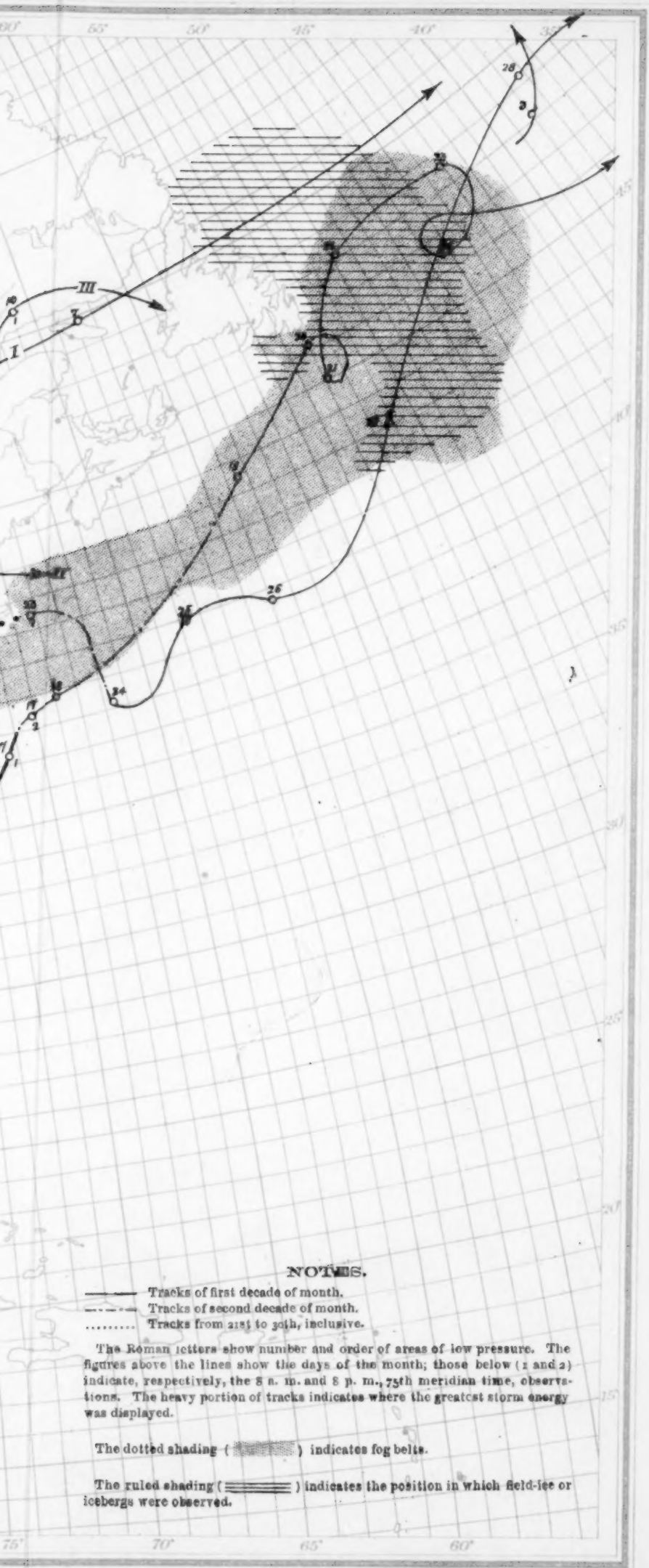
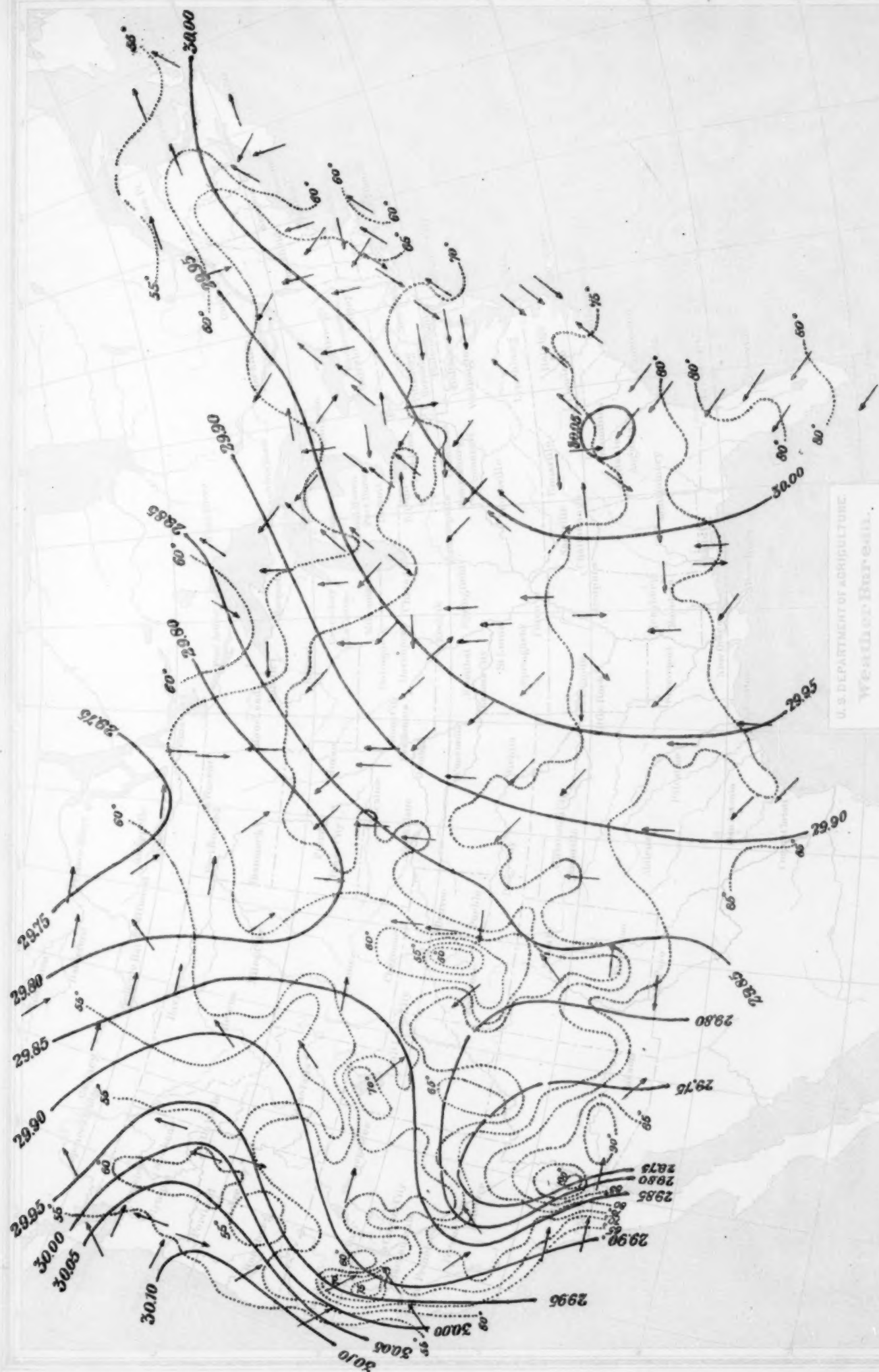


Chart II. Isobera, Isotherma, and Winds. June, 1893.



U.S. DEPARTMENT OF AGRICULTURE.

Weather Bureau.

Mark Williams, Chief.

Published by authority of the Secretary of Agriculture.

Observations for the year ending June 30, 1893, and for the year ending June 30, 1892.

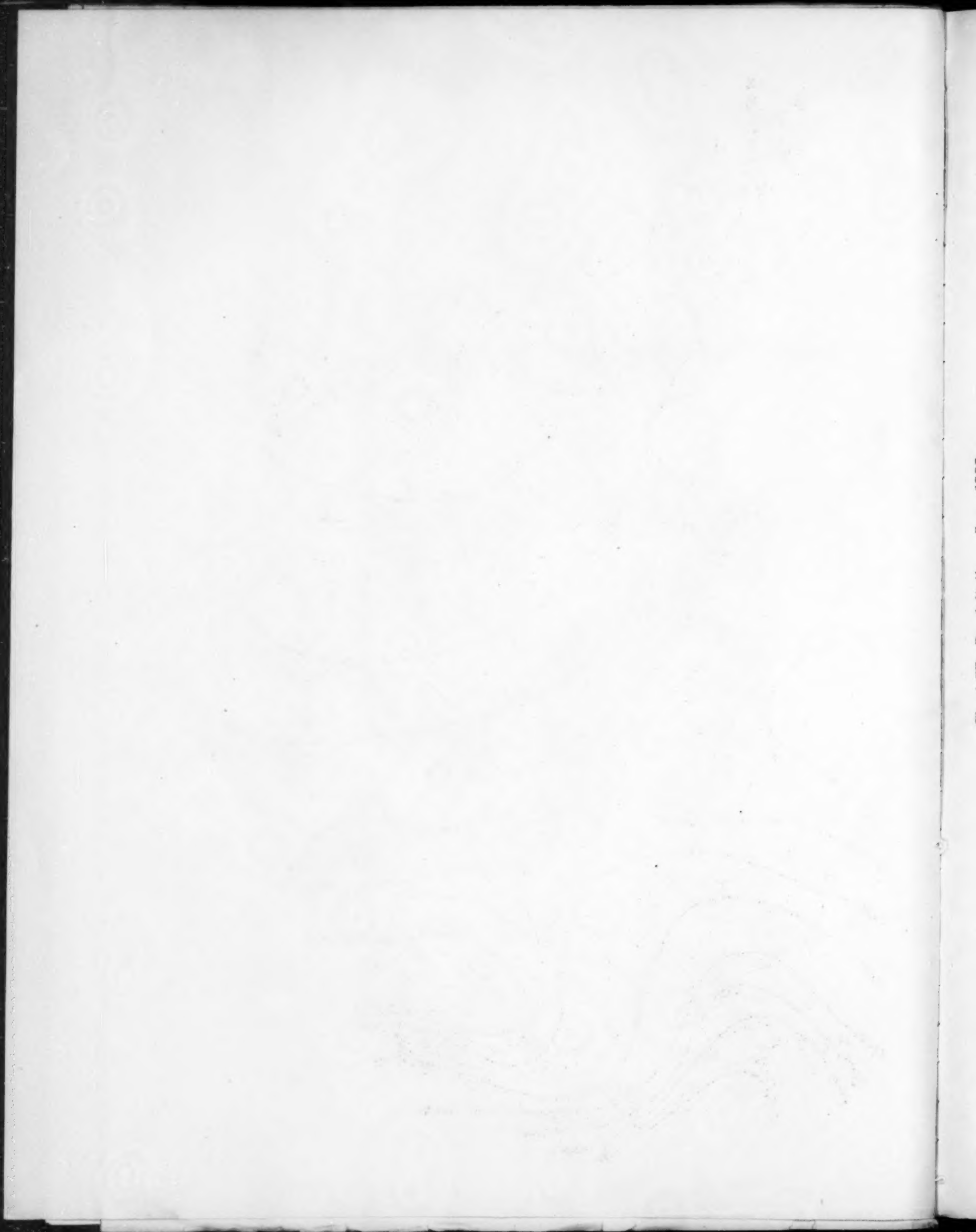


Chart III. Precipitation. June, 1893.



Chart IV. Tracks of areas of High Pressure. June, 1893.

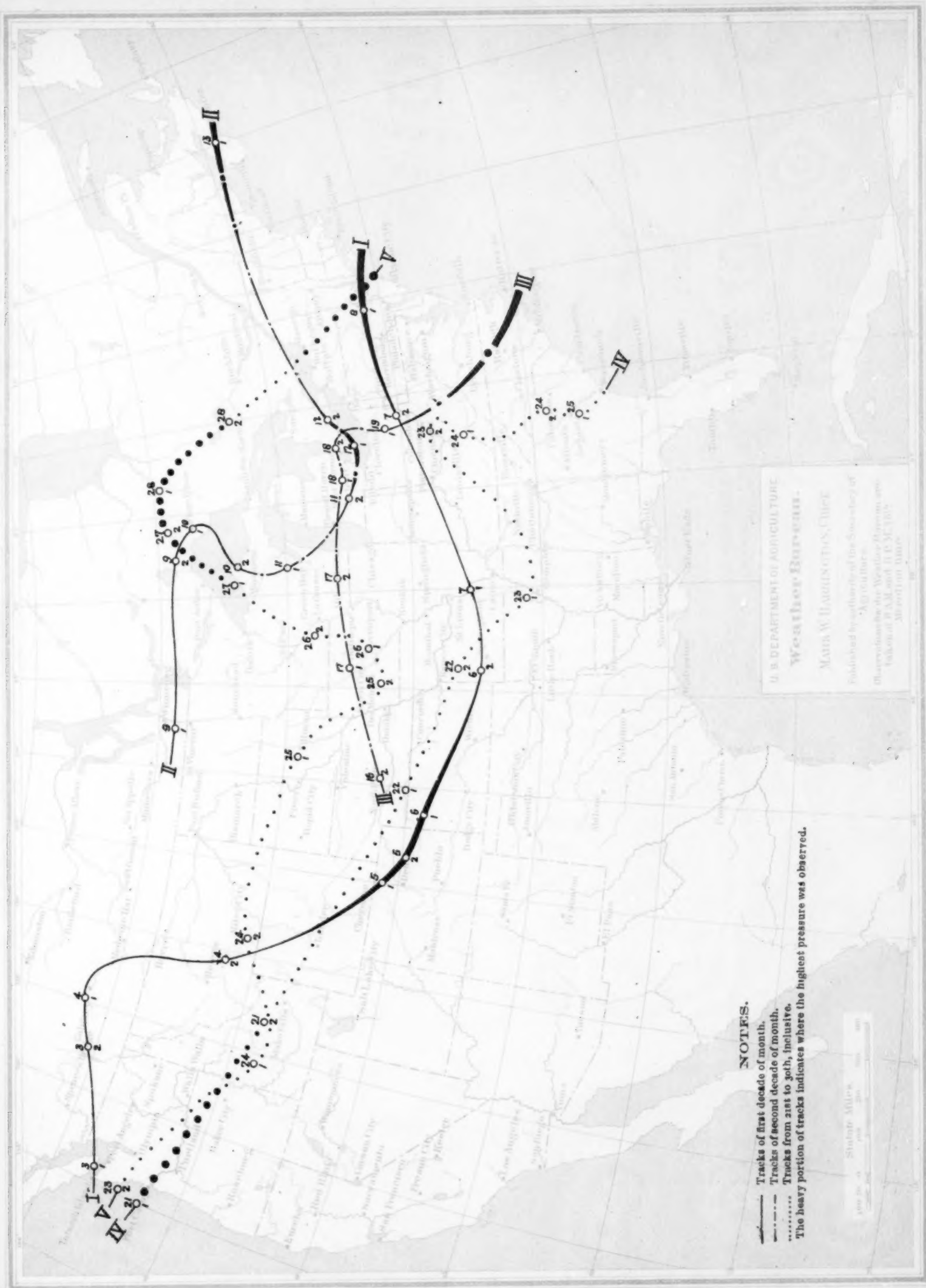
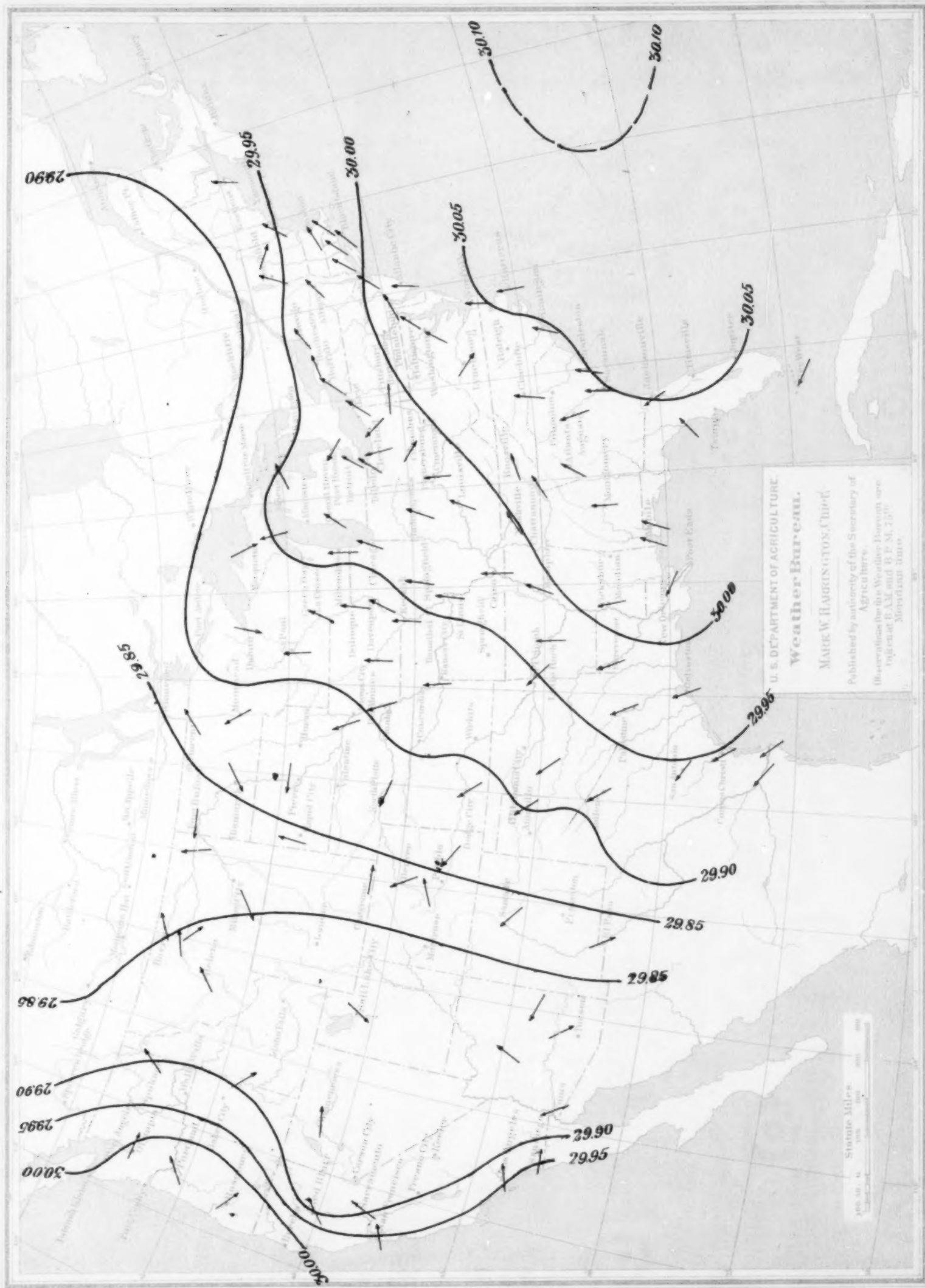


Chart V. Normal Pressure (20 years) and Average Wind Direction (15 years) for June.



List of voluntary observers of the Weather Bureau, who furnish meteorological reports for the Monthly Weather Review.

Alabama.		D D Ross (Chiracahua Mt)	A P Robinson Conway Ark	J G Heald Cloverdale Cal	L D Palmer Needles Cal
John M Ackley		Tombstone Ariz	Jacob Brobst	John T Britton	Sherman W Marsh
Alco Ala		Edward Vanderlip	Corning Ark	Colusa Cal	Nevada City Cal
Prof P H Mell	X	Crittenden Ariz	D H Hopkins	D S Sartwell	C H Kellogg
Auburn Ala		F A Fiege	Dallas Ark	Crescent City Cal	Newcastle Cal
Wm Fowler		Dragoon Ariz	Prof G L Teller	A C Hillman	B F Spencer
Bermuda Ala		George F Cook	Fayetteville Ark	Davisville Cal	Nordhoff Cal
B M Jacobs		Dudleyville Ariz	U G McLinden	W W Bliss	Edw Llewellyn
Birmingham Ala		Dr R B Tripp	Gaines Landing Ark	Duarte Cal	Oakdale Cal
W J Holland		(Eagle Pass)	W O Bartlett	Fred B Lemoine	Director Chabot Obs'y
Brewton Ala		Fort Thomas Ariz	Hamburg Ark	Drytown Cal	Oakland Cal
W F Spurlin		A T Colton	Post Surgeon U S A	J A Edman	W H Edwards
Camden Ala		Florence Ariz	Hot Springs Ark	(Edmonton)	(Orangevale)
Hon M L Stansil		Post Surgeon	C L Sampson	Meadow Valley Cal	Folsom City Cal
Carrollton Ala		Fort Apache Ariz	Jonesboro Ark	S Holland	L C Jacobs
Dr J G Michael		Post Surgeon	Silas C Turnbo	Evergreen Cal	Oroville Cal
Citronelle Ala		Fort Bowie Ariz	(Keesees Ferry Ark)	Fred E Fox	G W Smith
A M Valerio		Post Surgeon	Protom Mo	Fall Brook Cal	Palermo Cal
Daphne Ala		Fort Grant Ariz	Mrs Isabella M Perrin	Mrs W H Robinson	H S Channing
Chas M Fox		Post Surgeon	Kirby Ark	Florin Cal	Pasadena Cal
Elba Ala		Thomas Richey	M F Locke	J H Sturges	Jas Singley
James Milton		(Fort Mohave)	Com of Agriculture	Folsom City Cal	Petaluma Cal*
Eufaula Ala		Mohave City Ariz	Little Rock Ark	Post Surgeon	G W Barlow
Richard Smith		D Murphy	F H Clark	Fort Bidwell Cal	Placerville Cal
Florence Ala		Gila Bend Ariz	W H Pyburn	N C Miller	A G Platt
M H Sellars		D Rope	Lonoke Ark	French Corral Cal	Pleasanton Cal
Geneva Ala		Holbrook Ariz	Geo L Madding	C M Fitzgerald	John Hyslop
M H Yerby		J W Stump	Madding Ark	Georgetown Cal	(Point Lobos)
Greensborough Ala		(Mt Huachuca)	John W Stephens	J J West	San Francisco Cal
Dr John Gordon		Tombstone Ariz	Marcella Ark	Glendora Cal	Adams Chapin
Healing Springs Ala		Mrs E S Dodge	A C Dixon	B F Berriman	Poway Cal
Samuel Jordon		Oracle Ariz	Melbourne Ark*	Grass Valley Cal	L F Bassett
Highland Home Ala		George W Wells	Capt Joseph Evins	Fred G Moesch	Redding Cal
Prof J W A Wright		(Oro) Clifton Ariz	Mount Nebo Ark	Gridley Cal	C M Hammond
Livingston Ala		A E Martin	J W Walker	Guinda Independent	(Red Hill Ranch)
A M Weiler		Palomas Ariz	New Gascony Ark	Guinda Cal	Upper Lake Cal
Lynn Ala		G W Bonacker	Geo B Irby	J H Curtiss	Chas Aull
Thos Freeman		Payson Ariz	Newport Ark	Healdsburg Cal	Represa Cal
Maple Grove Ala		H W Adams	Alex Goodrich	E A Brush	Kendall Holt
T C Daniel		Peoria Ariz	Osceola Ark	Hydesville Cal	Rialto Cal
Maysville Ala		Maj T W Hine	Geo H Tisdale	C W Craig	J C Stanton
Wm Garrett		Phoenix Ariz	Rison Ark	Independence Cal	Rio Vista Cal
Mount Willing Ala		Catharine E Langhorne	Peter Hamilton	C F Macey	W E Keith
Dr J Huggins		Red Rock Ariz	Rogers Ark	(Iowa Hill)	Riverside Cal
Newbern Ala		W W Strohn	Chas A Hinchee	Iowa City Cal	S H Gerrish 1517 G street
L C Aday		Reymert Ariz	Searcy Ark	Dr A Fouch	Sacramento Cal
Newburgh Ala		M E Curry	E L Buerkle	Irvington Cal	J A Barwick
John C Killebrew		Rye Ariz	Stuttgart Ark	T T Tidball	Sacramento Cal
Newton Ala		Gee P Scholefield	A H Carrigan	Jolon Cal	Miss Elsie Ruhl
J W Clardy		(St Helena Ranch)	Washington Ark	Prof J W McLain	(Dry Creek)
Oxanna Ala		Pantano Ariz	Dr D M Wilson	Julian Cal	Sacramento Cal
W N Horn		Post Surgeon	Wiggs Ark	J F Parks	Michael Gorman
Pushmataha Ala		San Carlos Ariz	Dr A Dunlap	(Kennedy Gold Mine)	San Ardo Cal
L B Thornton		John McNeil	Winslow Ark	Jackson Cal	Dr A K Johnson
Tuscumbia Ala		Show Low Ariz	California.	F H Porter	San Bernardino Cal
Wm H Miller		H Koshland	H B Emerson	(Kono Tayee)	Max Frankenan
Union Ala		Signal Ariz	Agnew Cal	Lakeport Cal	Sanger Cal
P L Cowan		D D Gowan	H K Pettygrove	Joseph Dominici	Dr L Gregory
Union Springs Ala		care F H Nash	Anderson Cal	La Grange Cal	San Jacinto Cal
B M Duggar		Strawberry Ariz	Miss Winifred S Fry	Prof C D Perrine	Dr A C Simonton
Uniontown Ala		Miss Mamie Tevis	Arcata Cal	Lick Observatory	San Jose Cal
Dr E P Nicholson		Teviston Ariz	Riverside Trust Co Ltd	San Jose Cal	Tribune
Valley Head Ala		E L Wetmore	Arlington Heights	Ezra Fiske	San Luis Obispo Cal
Alaska.		Tucson Ariz	Riverside Cal	Lodi Cal	Hugh D Vail
Jos Zuboff		J C Hayden	W A Webster	F H McCullagh	Santa Barbara Cal
Killishnoo Alaska		Tucson Ariz	Bakersfield Cal	Los Gatos Cal	A Block
H S Tibbey		T B Carter	G A Hatfield	Maurice Neuman	Santa Clara Cal
Coal Harbor		Walnut Grove Ariz	Barstow Cal	Mariposa Cal	W R Springer
(Via Sitka and Sand Point) Alaska		F W Heyne	Armin O Leuschner	Maxwell Mercury	Santa Cruz Cal
Dr J D Bluett		(Walnut Ranch)	Berkeley Cal	Pentecost & Reed	L E Blochman
Metlakatla Alaska		Rucker Ariz	Biggs Argus	Middletown Cal	Santa Maria Cal
(via Ketchikan Alaska)		Post Surgeon	Biggs Cal	J H Southwick	Crane Bros
Arizona.		Whipple Barracks	W C Jones sr	Milton Cal	Saticoy Cal
Mrs J H Hamilton		Prescott Ariz	Campo Seco Cal	C E Prindle	E S Tomblin
Antelope Valley		C P Smith	Wm Barry	Mokelumne Hill Cal	(Shasta Springs)
(Via Stanton) Ariz		Wilgus Ariz	(Centreville)	George North	Mott Cal
S J Starmer		Arkansas.	Niles Cal	(Mt Glenwood)	Robert Hall
(Ariz Canal Co's dam)		Lum Woodruff	Chino Cal	Winters Cal	Sonoma Cal
Phoenix Ariz		Ashdown Ark	J F Beale	J S Mockabee	T G Brown
Rev J G Pritchard		J E Scanlan	Citrus Cal	Mountain View Cal	Stockton Cal
Bisbee Ariz		A L Morgan	Pomona College	Wm H Martin	T B Sanders
J S Day		Camden Ark	Claremont Cal	Napa Cal	Susanville Cal
Buckeye Ariz				H P Aldrich	E C Vorheis
E K Sykes				Needles Cal	Sutter Creek Cal
Calabasas Ariz					

J E Boal (Sweetwater Dam) National City Cal	S W De Busk Downing Colo	J M Wadsworth Pagoda Colo	Rev Wm Goodwin New Hartford Conn	W L Jewett Ocala Fla
Austin Young (Tehachapi) Greenwich Cal	I W La Munyon Dumont Colo	Samuel Wade Paonia Colo	C H Lathrop North Franklin Conn	M O Dovel Orlando Fla
Julius Forrer Tulare Cal	Christen Jensen (East Dale Colo) Costilla N Mex	P K Barthell Parachute Colo	C H Truesdale North Grosvenor Dale Conn	W J Borden Oxford Fla
John Tuohy Tulare Cal	Agent U P R R First View via Cheyenne Wells Colo	H W Goodrich Red Cliff Colo	G C Comstock Norwalk Conn	Wiley Stinson Plant City Fla
P R McCabe Turlock Cal	E B Pierce Fort Collins Colo	Dr G D Yokum Rico Colo	K B Loomis South Manchester Conn	J H Hamilton (St Andrews) St Andrews Bay Fla
Dr Geo McCowan Ukiah Cal	Prof L G Carpenter Fort Collins Colo	Agent U P R R River Bend Colo	Storrs School Exp Sta Storrs Conn	Post Surgeon (St Francis Barracks) St Augustine Fla
C M Hammond Upper Lake Cal	Dr T H Breen Fruita Colo	F A Huntley B S A Rocky Ford Colo	Miss E D Larned Thompson Conn	Theodore G Maltby St Petersburg Fla
W H Roscoe Upper Mattole Cal	D D Bloom Garnett Colo	C T Woods Saint Cloud Colo	Rev E Dewhurst Voluntown Conn	Rev W H Carter Tallahassee Fla
G O Coburn Vacaville Cal	J Horace McClelland (Gaynor) Fort Collins Colo	E C van Diest San Luis Colo	Mrs B F Harrison Wallingford Conn	C D Webster Tarpon Springs Fla
Arthur L Webb Ventura Cal	Gen W J Palmer (Glen Eyrie) Colorado Springs Colo	S J Capps Scissors Colo	N J Welton Waterbury Conn	Georgia
A L Bancroft Walnut Creek Cal	Phil Weidemaier (Glen Eyrie) Colorado Springs Colo	W Knight Sedgwick Colo	S T Stockwell West Simsbury Conn	Dr J P Bowdoin Adairsville Ga
A S Noyes West Butte Cal	James Hitchings Gold Hill Colo	John Ross Seibert Colo	Delaware.	Prof L H Charbonnier Athens Ga
Wm Lumbard Wheatland Cal	Dr S M Bradbury Grand Junction Colo	H T Green Sheridan Lake Colo	John S Jester Dover Del	Park Morrill Atlanta Ga
A W Sehorn Willow Cal	R W Guss Greeley Colo	G E Lake (Smoky Hill Mine) Boulder Colo	Wm C L Carnagy Kirkwood Del	Col A P Butler Care J J Dick & Bro Augusta Ga
J M Case Winchester Cal	J H Marshall Greenhorn Colo	Geo Polhill Stamford Colo	J Y Foulk Milford Del	Prof D M Wade Blakely Ga
Dr D Ream Yreka Cal	M A Bunker Grover Colo	F M Friend Springfield Colo	Rev Lewis W Wells Millsboro Del	C E Lee Brag Ga
Sutter County Farmer Yuba City Cal	Agent U P R R Hugo Colo	Hon J H Crawford Steamboat Spring Colo	H L Wallace Seaford Del	Prof B P Gaillard Dahlonaga Ga
Colorado.	W Hamp Hugo Colo	C N C Evers (Sunnyside) Sunset Colo	District of Columbia	R W Cornell Darien Ga
Miss M A Coles Abbott Colo	E P Moon Husted Colo	Henry Kohler (Surface Creek) Delta Colo	M F Burrows cor 30th and M sts nw Washington D C	Wm W Kimzey (Diamond) Roy Ga
Agent U P R R Agate Colo	F H Stevens Idaho Springs Colo	P Blumer (Thon) Elizabeth Colo	Officer in Charge Washington Aqueduct Washington D C	Dr J T Chappell Dublin Ga
L O Stevens Akron Colo	B M Krumpantitzky Julesburg Colo	J R Pickett (T S Ranch) Whitewater Colo	Florida.	H A Roebuck Elberton Ga
W H Powless Alma Colo	Mrs N R Walters Kirk (via Fox) Colo	W P Quaintance Twin Lakes Colo	O R Thacher Avon Park Fla	John Axtell Fleming Ga
P W Warnick Amherst Colo	Agent U P R R Kit Carson Colo	P G Bonewitz Vilas Colo	John D McAliley Bristol Fla	T G Scott Forsyth Ga
T F Burke Arboles Colo	L A Norland La Jara Colo	A Wallet Wallet Colo	Fred L Robertson Brooksville Fla	C W Meaders Gillsville Ga
Amos Binford (Avoca) Yuma Colo	G T Herbert Lamar Colo	R Z Mason Ward District Colo	Dr J B Rosenberg Clermont Fla	T J Holden Hawkinsville Ga
Agent U P R R Bennet Colo	A T Gilkison La Porte Colo	Agent U P R R Watkins Colo	H W O Margary Eustis Fla	R L Rhodes Hephzibah Ga
L A Rawlings Box Elder Colo	W E Culver Las Animas Colo	J W Glenn Wilde Colo	Chas Ingall Federal Point Fla	R M Crum Homerville Ga
Dr B A Arbogast Breckenridge Colo	H M Knight Lavender Colo	J W Zepp Wray Colo	A H Adams Fort Meade Fla	Dr H H Cary La Grange Ga
W E Garver Brush Colo	A G Wallihan (Lay) Craig Colo	A N Turney Yuma Colo	John B Escott Grasmere Fla	Prof P Zellars Lincolnton Ga
Agent U P R R Byers Colo	Chas Green Le Roy Colo	F W Rausch Zuck Colo	Thos Roberts Green Cove Springs Fla	G W Warren Louisville Ga
W B Felton Canon City Colo	Miss Mary Johnson Leslie Colo	Connecticut.	J S Wade Homeland Fla	A W Latimer Lumpkin Ga
Hugh Taylor Castle Rock Colo	H L G Brown Livermore Colo	H R Stevens (Birmingham) Stevenson Conn	H D Pierce Hypoluxo Fla	G S Owen Marietta Ga
Miss L M Brooker Cheyenne Wells Colo	W H McCreery Loveland Colo	G J Case Canton Conn	E R Demain Jacksonville Fla	J W Frederick Marshallville Ga
Wm R Abbott Chivington Colo	S J Pratt McCoy Colo	S P Willard Colchester Conn	W L Van Duzor Kissimme Fla	O P Walling McArthur Ga
G C Wortman Climax Colo	E F Kerr (Middle Box Elder) Fort Collins Colo	M H Dean Falls Village Conn	W B Knight Lake City Fla	S A Cook Milledgeville Ga
Jno Parkison Collbran Colo	W M Stewart Minneapolis Colo	Rev S Hart Hartford Conn	C V S Wilson Manatee Fla	E L Campbell Monticello Ga
Dr S W Morrison Colorado Springs Colo	C S Aldrich Monte Vista Colo	W E Boardman Hartford Conn	Rev J H White (Merritts Island) Georgiana Fla	J J Beck Morgan Ga
A Reicheneker Como Colo	F Beach Monte Vista Colo	New London Water Works (Lake Konomowoc) New London Conn	A DeLaughter Moseley Hall Fla	J L Cutler Piscata Ga
A A Williams Cope Colo	A E Sprague Moraine Colo	J H Tucker Lebanon Conn	Wm Bahrt (Mullett Key) Port Tampa Fla	C M Witcher Point Peter Ga
G W Close Cumbres Colo	Frank W Hoskins Ouray Colo	Charles W Hubbard Middletown Conn	Miss M M Gardner Myers Fla	J F Wilson Poulan Ga
Agent U P R R Deer Trail Colo		R R Smith New Hartford Conn	Christopher Westall New Smyrna Fla	W M Towers Rome Ga
W O Stephens Delta Colo				D B Dennis Talbotton Ga
J J Gilligan Denver Colo				

Idaho.
 Frank Campbell
 American Falls Idaho
 Post Surgeon
 Boise Barracks
 Boise City Idaho
 A C Bomar
 Bonanza City Idaho
 F C Gordon
 Delta Idaho
 Post Surgeon
 (Fort Sherman)
 Sherman Idaho
 A H Soward
 Garden Valley Idaho
 Wood River Times
 Hailey Idaho
 J H Smith X
 Idaho City Idaho
 D McLoughlin
 Kootenai Idaho
 J Sherwood
 Lake Idaho
 J W Cowden
 Martin Idaho
 University of Idaho
 Moscow Idaho
 W N B Shepherd
 Paris Idaho
 Dr F B Delano
 Payette Idaho
Illinois.
 J W C Gray
 Atwood Ill
 Dr M M Robbins
 Aurora Ill
 W Holden
 Aurora Ill
 Prof M J Elrod
 Bloomington Ill
 Dan E Zook
 Bushnell Ill
 W P Halliday X
 (Pres't City Nat'l Bank)
 Cairo Ill
 Public Library X
 Cairo Ill
 R O Purviance
 Carlinville Ill
 Wm Rogan
 Carlyle Ill
 Prof A O Clark
 Dixon Ill
 M Durant
 Dubois Ill
 C L Farrington
 East Peoria Ill
 E B Schooley
 Effingham Ill
 L A Michels
 Flora Ill
 Post Surgeon
 Fort Sheridan Ill
 Fred U White
 Galva Ill
 T J Trovillion
 Golconda Ill
 Prof M S Oudyn
 Greenville Ill
 Shirley E Gray
 Griggsville Ill
 J M Ruggles
 Havana Ill
 A T Purviance
 Hennepin Ill
 D R Harrison
 Herrins Prairie Ill
 W J S Cathcart
 (Jordans Grove)
 Sparta Ill
 Geo McVicker
 Kankakee Ill
 Frank E Sanford
 La Grange Ill
 I B Roe
 Liberty Ill

J B Sheapley
 Martinsville Ill
 Dr G Leibrock
 Mascoutah Ill
 J Withington
 Mattoon Ill
 W P Gibbs
 McLeansborough Ill
 J K Wood
 Mount Pulaski Ill
 E E Thornton
 Muddy Valley Ill
 C H Fahs
 Olney Ill
 V E Phillips
 Olney Ill
 Dr W H Chappelle
 Oregon Ill
 J S Seeley
 Oswego Ill
 Dr J O Harris
 Ottawa Ill
 J E Templeton
 (Palestine)
 Rich Woods Ill
 J K Eberle
 Pana Ill
 W F Cook
 Paris Ill
 Dr F Brendel
 Peoria Ill
 H A Burr
 Philo Ill
 Henry B Clark
 Rantoul Ill
 J W James
 (Riley) Marengo Ill
 T D Robertson
 Rockford Ill
 N T Veatch
 Rushville Ill
 Godfrey Knetzger
 Saint John Ill
 John Craig X
 Springfield Ill
 R Williams
 Streator Ill
 R Dow
 Sycamore Ill
 C D Crafts
 Tuscola Ill
 O C Nussle
 Walnut Ill
 O A Watson
 Watseka Ill
 P J Bates
 White Hall Ill
 F Osborne
 Winnebago Ill
Indiana.
 L Stealy
 Angola Ind
 J T Moss
 Ashboro Ind
 John Johnson
 Bedford Ind
 C F Hole
 Butlerville Ind
 Rev E J Spelman
 Cambridge City Ind
 Dr N I Kithcart
 Columbia City Ind
 J A Perry
 Columbus Ind
 H Hessler
 Connersville Ind
 Sam D Symmes
 Crawfordsville Ind
 J P White
 De Gonia Springs Ind
 Higginbotham & Son
 Delphi Ind
 W J Davisson
 Farmland Ind
 D A Owen
 Franklin Ind

C W Whitney
 Hammond Ind
 J N Latta
 Hawpatch Ind
 C F R Wappenhans X
 Indianapolis Ind
 Gus Gramelspacher
 Jasper Ind
 J C Loomis
 Jeffersonville Ind
 Dr T C Hunter
 Kokomo Ind
 Lafe Crosier
 Laconia Ind
 Prof H A Huston
 La Fayette Ind
 D E Pryor
 Logansport Ind
 Wm P Goshnell
 Madison Ind
 J M Johnson
 Marengo Ind
 Prof J L Massena
 Marion Ind
 Milton Reed
 Markle Ind
 E Kirkwood
 Mauzy Ind
 J C Black
 Michigan City Ind
 J M Lockwood
 Mount Vernon Ind
 Stevens & Durham
 Muncie Ind
 Jonathan Beard
 New Albany Ind
 E Jones
 Princeton Ind
 Dr W N Wirt
 Rockville Ind
 J A Forsythe
 Seymour Ind
 S B Morris
 Shelbyville Ind
 Prof R G Gillum
 Terre Haute Ind
 J R Hart
 Union City Ind
 Prof J N Roe
 Valparaiso Ind
 Prof C G Boerner
 Vevay Ind
 Dr W B Squire
 Worthington Ind
Indian Territory.
 Post Surgeon
 Fort Supply Ind T
 J E Wolf
 Gwenddale Ind T
 E B Hinshaw
 Kemps Ind T
 B S Thompson
 Lehigh Ind T
 Ignatus Spitzer
 Purcell Ind T
 A W Bright
 Sallisaw Ind T
Iowa.
 C D Pettibone
 Algona Iowa
 David E Hadden
 Alta Iowa
 Conrad Schadt
 Amana Iowa
 Iowa Agricultural College
 Ames Iowa
 Isaac Young
 Ames Iowa
 J W Love
 Atlantic Iowa
 Prof F P Hocker
 Audubon Iowa
 H W Vandike
 Belle Plaine Iowa
 James Rodgers
 Blakeville Iowa

Hon B R Vale
 Bonaparte Iowa
 Moses Simon
 Carroll Iowa
 Prof A C Page
 Cedar Falls Iowa
 H E Reister
 Centerville Iowa
 Dr J W Smith
 Charles City Iowa
 A S Van Sandt
 Clarinda Iowa
 Luke Roberts
 Clinton Iowa
 A A Berry
 College Springs Iowa
 J W Bixby
 Corning Iowa
 Gregory Marshall
 Cresco Iowa
 Wm Ball
 Delaware Iowa
 Ph A Schlumberger
 Denison Iowa X
 George M Chappel X
 Des Moines Iowa
 C A Schaffter
 Eagle Grove Iowa
 Chas Reinecke
 Elkader Iowa
 H Conroy
 Emmetsburg Iowa
 L L Brigham
 Estherville Iowa
 Miss L A McCready
 Fort Madison Iowa
 Seth Dean
 Glenwood Iowa
 F L Williams
 (Grand Meadow)
 Postville Iowa
 J G Culver
 Greenfield Iowa
 Prof S J Buck
 Grinnell Iowa
 Chas G Rogers
 Grundy Centre Iowa
 E C Grenelle
 Hampton Iowa
 J W Bopp
 Hawkeye Iowa
 M T Ashley
 Hopeville Iowa
 Theodore Marks
 Hopkinton Iowa
 Henry S Wells
 Humboldt Iowa
 Emil F Wulfke
 Independence Iowa
 Prof J L Tilton
 Indianola Iowa
 Albert L Arner
 Iowa City Iowa
 J B Parmalee
 Iowa Falls Iowa
 Dr Chas Enfield
 Jefferson Iowa
 Prof John H Landes
 Keosauqua Iowa
 Casey & Ream
 Knoxville Iowa
 H B Strever
 Larrabee Iowa
 Mrs M B Stern
 Logan Iowa
 Dr A B Bowen
 Maquoketa Iowa
 L S Kilborn
 Marshalltown Iowa
 C A McGhan
 Mason City Iowa
 Gust Johnson
 (Maxon) Albia Iowa
 P W Hubbard
 Mechanicsville Iowa
 H D Smith
 Monticello Iowa

F G Thomas
 Moor Iowa
 Hon Wm Shriver
 Mt Ayr Iowa
 Dr Max E Witte
 Mt Pleasant Iowa
 Prof Alonzo Collin
 Mt Vernon Iowa
 A W Lewis
 Murray Iowa
 A Lufkin
 Newton Iowa
 G D Pattingill
 Osage Iowa
 Jos Boyd
 Oskaloosa Iowa
 H C Miller
 Ovid Iowa
 Wm J Wicks
 Panama Iowa
 W A Shaffer
 Richland Iowa
 W C Wychoff
 Rock Rapids Iowa
 Dr Caleb Brown
 Sac City Iowa
 Mrs C A Conger
 Seymour Iowa
 H G Doolittle
 Sibley Iowa
 A J Bond
 Storm Lake Iowa
 J M Rider
 Tipton Iowa
 Jos S Boise
 Villisca Iowa
 T F McCune
 Vinton Iowa
 W A Cook
 Washington Iowa
 C M Trumbauer
 Webster City Iowa
 Phil Dorweiler
 West Bend Iowa
 Merton L Fuller
 Williams Iowa
 Will McKnight
 Winterset Iowa
Kansas.
 W P Gulick
 Abilene Kans
 J J Cass
 Allison Kans
 Wm Cheetham
 Altoona Kans
 Prof E B Knerr
 Atchison Kans
 C A Perdue
 Beloit Kans
 C S Culver
 Bucklin Kans
 L C Wilson
 Buffalo Park Kans
 A G Alrich
 Cawker City Kans
 Chas Buschow
 Colby Kans
 J M Lobaugh
 Coldwater Kans
 Agent U P R R
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 Columbus Kans
 E Shaw
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 Downs Kans
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 El Dorado Kans
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 Elk City Kans
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 Emporia Kans
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 Englewood Kans

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Dr W M Goodwin La Crosse Kans	Agent U P R R Wallace Kans	Dr L D Chauff Bonnet Carre La	Vetal Cyr Fort Kent Me	Ag'l Experiment Station Amherst Mass
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Prof F H Snow Lawrence Kans	M L Stone Wamego Kans	Hon S P Henry Cameron La	Geo Ingraham Houlton Me	Chas W Jenks Bedford Mass
C B Jennings Lebo Kans	W Calvert Washington Kans	J A White Jr Clinton La	V P Hall Mayfield Me	F K Lathrop Beverly Farm Mass
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Ed F Haberlein McPherson Kans	H B Bomar Caddo Ky	Rev Joseph A Raby S J Grand Coteau La	F A Perley Mattawamkeag Me	Desmond Fitz Gerald Brookline Mass
C P Blachly Manhattan Kans	C H Major Canton Ky	O P Convillion Hamburg La	W D Upton Millbridge Me	Harvard College Observat'y Cambridge Mass
Prof E R Nichols Agricultural College Manhattan Kans	J W Kirby Carrollton Ky	W J Schell Hammond La	Maj John L Holoh Presque Isle Me	E C Brooks (Cambridge) Mt Auburn Mass
E H Kern Mankato Kans	C E Jones Catlettsburgh Ky	D W Harris Homer La	C Hopkins West Jonesport Me	Prof W M Davis Cambridge Mass
G F Riley Marion Kans	J B Atkinson Earlington Ky	A F Chanfrau Houma La	C P Cronk Baltimore Md	G W Weeks Clinton Mass
A C Abbott (Marmaton) Fort Scott Kans	Miss Lee Ray Edmonton Ky	G W Whitworth Jeanerette La	A E Acworth Barren Creek Springs Md	F A Tower Concord Mass
C I Hinman Medicine Lodge Kans	C D Lewis Eubanks Ky	Dr Wm Meyer Lake Charles La	Thos Berry Benedict Md	Conant Observatory Dudley Mass
J L Steele Minneapolis Kans	T W MacGill Franklin Ky	J G Oldfield Lake Providence La	Calvert Orem Cambridge Md	Geo L Lyon (Egg Rock) Nahant Mass
A Bahl Monument Kans	Dr R J Spurr Greendale Ky	A Werner Lawrence La	F F Brown (Boetcherville) Cumberland Md	C V S Remington Fall River Mass
C H Foltz Moreland Kans	L C Alcorn Greensburg Ky	Dr E A Crawford Liberty Hill La	E T Shriver Cumberland Md	O B Truesdell Fiskdale Mass
John A Gordon Morton Kans	Dr F L Harrod Harrodsburgh Ky	J C Armstrong Many La	H Shriver Cumberland Md	Dr J Fisher Fitchburg Mass
H N Renfrew Mount Hope Kans	G W Anderson Hendricks Ky	Fred Landry Maurepas La	A F Galbreath Darlington Md	
Porter Young Ness City Kans	J J Roberts La Grange Ky	L J Dodge Melville La	F C Ramsdell Denton Md	
Dr E M Turner Norton Kans	J B Kinnard Lancaster Ky	Mrs J A Gebert New Iberia La	G W Minnich Easton Md	
Geo W Keys Oberlin Kans	Chas F See Louisiana Ky	R E Kerkam New Orleans La	Chas Feldman Edgemont Md	
H D Leach Olathe Kans	Frank Burke Louisville Ky	Thos Steele Oxford La	Prof G G Curtis Fallston Md	
D Doyle Oswego Kans	C A Matlock Matlock Ky	Hon J E Le Blanc Paincourtville La		
	Geo S Fox Middlesborough Ky			

List of voluntary observers of the Weather Bureau, etc.—Continued.

v

Dr A P Mason Fitchburg Mass Boston Water Works Framingham Mass Dr W E Brown Gilbertville Mass John C Wheeler Great Barrington Mass C Woolley Groton Mass Groton School Groton Mass H W Cushing Hingham Mass C F Sleeper Hyannis Mass Essex Company Lawrence Mass D E Hoxie Leeds Mass Leicester Academy Leicester Mass W B Hosmer Leominster Mass Prop Locks & Canals Lowell Mass F E Saunders Lowell Mass M W Graves Ludlow Center Mass J W Darcey Lynn Mass J C Haskell Lynn Mass W C Winter Mansfield Mass Fred W Gow Medford Mass Middleborough Water Wk's Middleborough Mass Rev A K Teele Milton Mass W H Allen Monroe Mass Dr G E Fuller Monson Mass T R Rodman New Bedford Mass New Bedford Water Works New Bedford Mass Newburyport Water Works Newburyport Mass C H Kohlrausch Jr North Billerica Mass Miss L B Knapp Plymouth Mass J R Smith Provincetown Mass Mrs I D Page Randolph Mass John S Cheever Roxbury Mass Miss L W Chase Royalston Mass A A Smith Salem Mass J Q Evans Salisbury Mass Elisha Slade Somerset Mass Felderhof South Dennis Mass Post Surgeon National Armory Springfield Mass Dr E U Jones Taunton Mass A F Sprague Taunton Mass Taunton Water Works Taunton Mass Turners Falls Co Turners Falls Mass Dr S W Abbott Wakefield Mass Boston Mfg Co Waltham Mass	Mrs F A Smith Wayland Mass E P Morton Webster Mass Prof Sarah F Whiting Wellesley Mass G S Newcomb Westborough Mass Williams College Obsy Williamstown Mass A E Sweetland Winthrop Mass G W Swan Worcester Mass Worcester Academy Worcester Mass Michigan. W H Howard Adrian Mich Prof C E Barr Albion Mich G W Grigsby Allegan Mich P M Smith Alma Mich R K Palmer Ann Arbor Mich Wm Atkin (Arbela) Millington Mich F N Hilton (Ball Mt) Pontiac Mich Mrs Ida McDiarmid Bear Lake Mich R O Gould (Berlin) Smith Mich C Leavitt Bellaire Mich Dr H V Tutton Benton Harbor Mich J A Van Deman Benzonia Mich W J Jones Berrien Springs Mich F A Zerby Berrien Springs Mich D B Alger Birch Run Mich S Alexander Birmingham Mich A Hardy Boon Mich David Straehly (Bronson) Burr Oak Mich H McNair Brown City Mich Jas White (Caldwell) Manton Mich E S Grierson Calumet Mich E H Green Charlevoix Mich D Woodward Clinton Mich C W Brown Crystal Falls Mich Edward A Evans X Detroit Mich Mrs H A Hepburn Ewart Mich L D Watkins (Fairview) Manchester Mich M Conklin Fitchburgh Mich W L Fisher Flint Mich A Wm Brown Gaylord Mich Worden Wells Glenwood Mich Theo Karmsey Grand Rapids Mich J W Morris Grape Mich	Dr O Palmer Grayling Mich L B Smith Hanover Mich E S Shaw Harbor Springs Mich W E Aldrich Harrison Mich Dr D W Mitchell Harrisville Mich F H Edwards Hart Mich Dr F R Timmerman Hastings Mich C F Leipprandt Hayes Mich A D DeGarmo Highland Station Mich E B Rogers Hillsdale Mich F W Munson Howell Mich O L Giddings Ivan Mich W Bice Jeddo Mich W A Black Kalamazoo Mich A G Smith Lake City Mich Dr H B Baker Sec State Board of Health Lansing Mich A Lathrop Lathrop Mich M M McCormack Lewiston Mich H C Bradish (Madison) Adrian Mich Dr G H Green Marshall Mich N Cody Mayville Mich John Randall Mio Mich Mrs A R Rogers Montague Mich J A Hartzler Mottville Mich Nellie A Mayo (North Marshall) Battle Creek Mich Olivet College Olivet Mich W H Faxon Ovid Mich L Marvill Parkville Mich L R Brown Rawsonville Mich O D Thomson Romeo Mich Rev J Ferries St Ignace Mich Marion R Nims Sand Beach Mich C H Force Stockbridge Mich Dr J S Caulkins Thornville Mich A Smith Vandalia Mich V W Eaton (Washington) Romeo Mich E P Reese Weldon Creek Mich J H Forster Williamston Mich J C Bemiss Ypsilanti Mich Minnesota. Fred Audrist Ada Minn Rev R B Abbott Albert Lea Minn	Jos F Heibel Alexandria Minn C E Crane Alma City Minn Henry Gelting Beardsly Minn Warren S Jackson Bingham Lake Minn Dr F L Puffer Bird Island Minn C B Pettie Bloomington Minn John A Quick Bonniwells Mills Minn J W Klinker Caledonia Minn O A Hallim Cambridge Minn Jacob Rouse Camden Minn W V Davee Clear Lake Minn Peter Engel Collegeville Minn John Ross Crookston Minn D F Akin Farmington Minn F J Kneeland Fergus Falls Minn C F Greening Grand Meadow Minn B C Finnegan Grand Rapids Minn J G C Johnson Granite Falls Minn C Ufford Holland Minn Mrs Carrie D Lacy Kinbrae Minn Wm Maddy (Lake Winnibigoshish Dam) Grand Rapids Minn John Ellingson (Leech Lake) Grand Rapids Minn A W Sheets Long Prairie Minn Hon A Barch Luverne Minn Geo W Richards Maple Plain Minn E A Beals X Minneapolis Minn Wm Cheney Minneapolis Minn J H Aschenbeck Minneapolis Minn H B Waterman Minnesota City Minn L G Moyer Montevideo Minn D T Wheaton Morris Minn Jos O Estrem New London Minn Carleton College Northfield Minn Dr P A Walling Park Rapids Minn Neil McKay (Pine River) Brainerd Minn J E Walbridge Rochester Minn Capt F Wherland (Rolling Green) Fairmont Minn Patrick Henry (Sandy Lake Dam) Libby Minn H W Hill St Charles Minn S Marlatt St Cloud Minn Rev O A Norman St Oloff Minn	James Bennett St Peter Minn J A Peck Wabasha Minn A F Elfstrum Willmar Minn A M Pett & Son Winona Minn Mississippi. W L McGee Agricultural College Miss Augustus Studebaker Biloxi Miss W H Swann Briers Miss Dr G W Smith-Vaniz Canton Miss T B Word Clarksdale Miss D H Miller Crystal Springs Miss Lloyd T Binford Duck Hill Miss C W Barber Edwards Miss James E Mills Enterprise Miss I N Bedford Fayette Miss E R Somerville Greenville Miss L Heyman Kosciusko Miss Capt C D Koch (Logtown) Pearlington Miss B T Webster Louisville Miss P E Blumer Moss Point Miss W H Hill Palo Alto Miss Dr C W Bolton Pontotoc Miss Prof R B Fulton X University Miss Dr A J Sanderson Vaiden Miss Dr R J Hyatt X Vicksburg Miss Prof J Reeves Washington Miss A Erikson Water Valley Miss W S Davis Waynesborough Miss Prof Frank A Millidge Woodville Miss Missouri. L P Riley (Akron) Andover Mo L T Theilmann Appleton City Mo J T Armstrong Arthur Mo Newburn & Co Bethany Mo S N Page Big Piney Mo L Benecke Brunswick Mo J W Wallace Bryant Mo J W Jackson Cabool Mo W H Lown Canton Mo Pettit & Welch Carrollton Mo T Z Russell Carthage Mo H A McNally X Columbia Mo Levi Chubbuck X Columbia Mo Fr Odilo Russell Conception Mo
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A F McCray Cowgill Mo	J D Sanders Mine La Motte Mo	Montana. Will Kennedy Boulder Valley Mont	Chas Seltz De Soto Nebr	E Smith Ravenna Nebr
Wick Morgan Dadeville Mo	E S Allen Mount Vernon Mo	Mrs M W Alderson Bozeman Mont	A Dahl Ericson Nebr	D F Trunkley Red Cloud Nebr
W H Broadbuss Darksville Mo	A H Helmbrecht New Boston Mo	Geo T Wicks Cokedale Mont	J A Wood Ewing Nebr	J A Chadbourne Santee Agency Nebr
J F Rhea Dixon Mo	Andreas Olnhausen New Hartford Mo	John R Richardson Corbin Mont	Dr I Humphrey Fairbury Nebr	L E Ost Seward Nebr
David Sharp East Lynne Mo	Max Eimbeck New Haven Mo	College of Montana Deer Lodge City Mont	P B Gailord Fairfield Nebr	G H Rogers Springview Nebr
John S Luthy Edge Hill Mo	A I Zeigle New Palestine Mo	John G Hess (Dry Fork) Big Sandy Mont	Post Surgeon Fort Robinson Nebr	Mark Baldwin Stanton Nebr
J D McFarland Edina Mo	G E Nichols Neosho Mo	Post Surgeon Fort Custer Mont	Post Surgeon (Fort Sidney) Sidney Nebr	C A Skinner (State Farm) Lincoln Nebr
J H Sharp Eight Mile Mo	E E Steines (Oakfield) Hollow Mo	Post Surgeon Fort Keogh Mont	J N Bennett Franklin Nebr	J L Harrington Superior Nebr
S Newton Eldon Mo	Henry Bruhl Oak Ridge Mo	Wm Gaddis Fort Logan Mont	Isaac E Heaton Fremont Nebr	P W Risser Syracuse Nebr
Henry Miller Emma Mo	H Montgomery Olden Mo	Post Surgeon Fort Missoula Mont	F M Flory Geneva Nebr	G D Carrington Table Rock Nebr
W H Baker Farmersville Mo	Wm Kaucher Oregon Mo	Post Surgeon (Camp Poplar River) Poplar Mont	G S Truman Genoa Nebr	W L Dunlap Tecumseh Nebr
Prof T Berry Smith Fayette Mo	Sam M Ruley Oregon Mo	J H Ray Glendive Mont	John P Finley Gering Nebr	Dr A D Nesbit Tekamah Nebr
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Wm Muir Fox Creek Mo	W B Cox Oto Mo	E J Glass Helena Mont	W Burghardt Haigler Nebr	W N Hunter Turlington Nebr
Mary A Snyder Fulton Mo	J R Dudley Palmyra Mo	C V Walker Hogan Mont	A R Dew Harrison Nebr	George L Folsom Wallace Nebr
Otto Sims Gainesville Mo	W S Forsyth Paris Mo	R H Clendenin Martinsdale Mont	Thos B A Watson Hartington Nebr	Mrs J M Pile Wayne Nebr
W P Young Gallatin Mo	W R McIlvaine Phillipsburgh Mo	E H Brewster Mingusville Mont	Dr J T Fleming Harvard Nebr	G Treat Weeping Water Nebr
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Jos Milburn Glensted Mo	Dr M E Shelton Poplar Bluff Mo	Nebraska. R E Bowden Agee Nebr	Dr C M Easton Hebron Nebr	Mrs C W Le Bar Wilcox Nebr
J W Pulliam Gorin Mo	Dr Wm Hiron Princeton Mo	Peter Fowlie Ansley Nebr	John Lane Holdrege Nebr	W H Davis York Nebr
L M Bean Gordonville Mo	G E Bedford Rea Mo	E D Smith Arberville Nebr	J M Bird Imperial Nebr	Nevada. M D Murphy Austin Nev
Lindon Marts Grove Dale Mo	Prof A L McRae Rolla Mo	W F Jenkins Arcadia Nebr	H Adams Indianola Nebr	J R Harcourt Belleville Nev
A J Sharp Harrisonville Mo	H H Heiney Round Spring Mo	Dr A S Mansfelde Ashland Nebr	D A Piercy Kennedy Nebr	G Nicholl Belmont Nev
Dr J I Brady Hastain Mo	L C Saeger Saint Charles Mo	F Rein Ashton Nebr	D Henderson Jr Kimball Nebr	A M Ashby Candelaria Nev
E J Tweed Houston Mo	Prof F E Nipher Washington University Saint Louis Mo	C A Wood Auburn Nebr	Ira P Griswold Lexington Nebr	Ford A Carpenter Carson City Nev
Chas E Reese Humansville Mo	C G Taylor Sedalia Mo	A H Gale Bassett Nebr	University of Nebraska Lincoln Nebr	Prof C W Friend Carson City Nev
C M Hunt Irena Mo	J S Chandler Shelbina Mo	Dr J T Armstrong Beatrice Nebr	C C Irwin Lynch Nebr	W T Crane (Cranes Ranch) Elko Nev
W H Delano Ironton Mo	I N Morris Stanberry Mo	C G George Beaver City Nebr	D D Dayton Madrid Nebr	D Fowler Downeyville Nev
C B Lane Jefferson City Mo	E L Hall Steffenville Mo	C E Ward Belvidere Nebr	John Ellis (Marquette) Central City Nebr	C H Sproule Elko Nev
E H Adams Lamar Mo	G W Goodlett (Stellada) Windsor Mo	J F McGaughey Brandon Nebr	J Hull Minden Nebr	M B Garahan Ely Nev
W D Wade Lamonte Mo	E A Pinnell Steeleville Mo	L F Rector Burwell Nebr	Agent B & M Ry Mullen Nebr	Miss Bessie Potts (Empire Ranch) Care Geo Nicholl Belmont Nev
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M W Serl Lebanon Mo	O J Townsend Unionville Mo	Geo B Mair Callaway Nebr	J H Hassinger Nesbit Nebr	C Lewers (Lewers Ranch) Franktown Nev
Chas Tenbuer Lexington Mo	F W May Virgil City Mo	E M Couch Cornlea Nebr	Dr J L Greene Norfolk Nebr	E I Mather McDermitt Nev
J R Eaton Liberty Mo	J R Mayre Vermont Mo	Dr G Roberts Creighton Nebr	E W Black North Loup Nebr	C J Adams Mill City Nev
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J W James Mansfield Mo	Prof J H Frick Warrenton Mo	Robert P Hoxsey Crete Nebr	A U Morris O'Neill Nebr	Wm Oothout Jr Palmetto Nev
E R Graham Marble Hill Mo	Henry Mansfield Wellsville Mo	G A Loveland Crete Nebr	F M Larison Ough Nebr	N P Dooley Pioche Nev
E D Hicks Marceline Mo	J A Truex West Plain Mo	Mrs L A Wibley Culbertson Nebr	C C Irwin Paddock Nebr	State University Reno Nev
Rev W H Black Marshall Mo	W H Liggett Wheatland Mo	E B Taylor David City Nebr	C Shieldstream Palmer Nebr	L Allen St Clair Nev
Marcus W Wood McCunes Station Mo	L A Dewey Whiteside Mo		Edward Arnold Ponca Nebr	
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Mrs Walter Stofiel
Stofiel Nev
Wm Harton
Sunnyside Nev
Henry F Schuldt
Tuscarora Nev
James B Gilmore
Tybo Nev
Prof Mark Averill
Virginia City Nev
C H Gordon
Wabuska Nev
New Hampshire.
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Berlin Mills N H
Benj Tucker
Bethlehem N H
G W Bridges
Brookline N H
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H C Allison
Dublin N H
Agr Exp Sta
Durham N H
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East Canterbury N H
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Grafton N H
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Groveton N H
Dartmouth College Obs'y
Hanover N H
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Keene N H
Lake Winnepesaukee
Cotton and Woolen M'n'g Co
Lakeport N H
J D Howe
Lancaster, N H
Charles Nurse
Littleton N H
W Little
Manchester N H
Chas H Webster
Nashua N H
W C Gale
Newton N H
J L Binford
North Conway N H
Pennichuck Water Works
(Pennichuck Station)
Nashua N H
Miss Helen M Clark
Plymouth N H
G C Ward
Sanbornton N H
N B Waters
Stratford N H
A R Sweetzer
Tilton N H
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West Milan N H
New Jersey.
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H Y Postma
Egg Harbor City N J
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Elizabeth N J
I H Levy D D S
Franklinville N J
J A Van Mater
Franklin Furnace N J
Miss A S Yard
Freehold N J
H C Perry
Friesburg N J
R N Cornish
Gillette N J
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Hammononton N J
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Hanover N J
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Imlaystown N J
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Junction N J
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Lambertville N J
W L Lance Jr
(Lancewood)
Whiting N J
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Locktown N J
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T J Beans
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Newark N J
G C Sonn
Newark N J
Mrs G H Cook
New Brunswick N J
C V Meyers
New Brunswick N J
E W McGann X
New Brunswick N J
D L Foster
Newton N J
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Ocean City N J
Rev S W Knipe
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Paterson N J
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A Knell
Albert N Mex
M R Gaines
Albuquerque N Mex
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Coolidge N Mex
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East Las Vegas N Mex
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Embudo N Mex
E A Clemens
Estalina Sps (via)
Magdalena N Mex
F W McSchoolie
Folsom N Mex
Post Surgeon
Fort Bayard N Mex
Post Surgeon
Fort Wingate N Mex
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Gallinas Spring N Mex
E M Cosner
Halls Peak N Mex
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Hillsborough N Mex
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Las Cruces N Mex
Richard Pohl
Los Lunas N Mex
E K Caldwell
Monero N Mex
C J Collyer
Olio N Mex
H B Hersey X
Santa Fé N Mex
C N Anthony
Socorro N Mex
L Hines
Springer N Mex
Wm L McClure
Taos N Mex
New York.
H R Ainsworth M D
Addison N Y
H A Wilder
Akron N Y
W H Bassett
Alfred Center N Y
Otto Ruhl
Ampersand N Y
Prof John P Slocum
Angelica N Y
J D Tate
Arcade N Y
Miss Etta L Wilcox
Arkwright N Y
Asa Adams
Atlanta N Y
S F Gould
Avon N Y
S C Suydam
Baldwinsville N Y
Merritt M Clark
Bedford N Y
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Binghamton N Y
Dr Wm H Ross
Brentwood N Y
Dr F A Winne
Brockport N Y
D B Stillman
Brookfield N Y
F G Brill
891 Greene Ave
Brooklyn N Y
Prof H Priest
Canton N Y

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Castile N Y
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Central Park New York City
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Chenango Forks N Y
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Cherry Creek N Y
Chas E Taylor
Constableville N Y
G Pomeroy Keese
Cooperstown N Y
Prof D L Bardwell
Cortland N Y
C E Hallegas
DeKalb Junction N Y
F W Squires
Demster N Y
Wm Bolling
Dunkirk N Y
H Tabor
(Easton)
Greenwich N Y
Wm P Hunt
(Eden Centre)
Eden N Y
Oscar Snyder
Ellis N Y
Gerity Brothers
Elmira N Y
T P Yates
(Factoryville)
Waverly N Y
Robert Warwick
Fleming N Y
Post Surgeon
Fort Niagara
Youngstown N Y
H J Davis
Friendship N Y
Mrs N S Yates
Geneva N Y
L W Chamberlain
Gloversville N Y
James Hyatt
(Honeymead-brook)
Bangall N Y
Chas E Whitney
Humphrey N Y
Engineering Dept
Cornell University
Ithaca N Y
Prof E A Fuertes X
Ithaca N Y
R M Hardinge X
Ithaca N Y
C L Bishop
Jamestown N Y
R E Cronkhite
Kings Station N Y
Henry A Stone
(Kingston)
Rondout N Y
Arthur K Harrison
Lebanon Springs N Y
Wm L Annin
Le Roy N Y
Ed Tarbell
Liberty N Y
E Sweetland
Little Valley N Y
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Lockport N Y
C S Rice
Lowville N Y
Dr M A Veeder
P O Box 602 Lyons N Y
Post Surgeon
Madison Barracks
Sackets Harbor N Y
Albert B Johnson
Malone N Y
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Middletown N Y
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J E White
Mt Morris N Y
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Newark Valley N Y
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Trumbull Corners N Y
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New Lisbon N Y
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North Hammond N Y
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Number Four N Y
Dr P M Wise
Ogdensburg N Y
J P Davis
Oxford N Y
E B Bartlett
(Palermo)
Vermillion N Y
W H Jeffers
(near Perry City)
Trumansburgh N Y
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Willets Point
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Dr Karl von Ruck
Asheville N C
C N Allen
Auburn N C
J M Blount
Bailey N C
J H Greene
Bakersville N C
H C Martin
Blowing Rock N C
Prof J W Gore
Chapel Hill N C
D E Stearns
Columbus N C
T B Lindsay
Douglas N C

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Miss Albertine Staub Highlands N C	Post Surgeon Fort Yates N Dak	John E Peele Bloomington Ohio	J N Hogsett Hillsborough Ohio	B B Heaslitt Strongsville Ohio
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Prof S D Bagley Louisburg N C	L C Stanford Kelso N Dak	C Peckenpauhg Camp Dennison Ohio	G W Nowels Killbuck Ohio	J T Dickey Tyrone Ohio
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J A Sinclair Marion N C	W E Hoover Larimore N Dak	C F Stokoy Canton Ohio	J C Levering Levering Ohio	W M Smith Van Wert Ohio
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E V Zoeler Tarboro N C	Prof H V Egbert Akron Ohio	C W Goodspeed Elyria Ohio	Wm H Slabuck New Holland Ohio	Post Surgeon Fort Reno Okla
H H Harrison Warrenton N C	James W Barnes Annapolis Ohio	Prof A C Redding Findlay Ohio	H D Gowey North Lewisburgh Ohio	Post Surgeon Fort Sill Okla
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H Clay Williams Willeton N C	Dr P H Clark Ashland Ohio	O A Cory Frankfort Ohio	J C Peoples Northwood Ohio	Morris Collar Guthrie Okla
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W H Fallon X Bismarck N Dak	Ed C Ely Batavia Ohio	W B Longstreth Gratiot Ohio	C T Coates Plattsburg Ohio	Mrs Gertrude Sherbourne Ponca Okla
T S Lowrie Bottineau N Dak	Frank E Fitch Bellevue Ohio	Dones Bros Greenfield Ohio	Dr D N Allard Pomeroy Ohio	Miss Cosette Stratton Sac & Fox Agency Okla
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T L Arnold Beulah Oregon	Pennsylvania.	W T Butz New Castle Pa	C H Cannon Providence R I	Post Surgeon Fort Meade S Dak
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U S Engineer Officer Cascade Locks Oregon	J Grathwohl Blooming Grove Pa	John E Codman Bureau of Water Philadelphia Pa	Geo W Hopkins Brewer Mine S C	Wilbur Varnum Gale S Dak
Chas Myer Cornelius Oregon	Prof J G Cope Bloomsburgh Pa	H L Ball Philadelphia Pa	J H Harmon Columbia S C	Dr W H Gates Gary S Dak
State Agr'l College Corvallis Oregon	A H Boyle Blue Knob Pa	John Comly 1529 Centennial Ave Philadelphia Pa	M S Connor Connors S C	Frank Drew Highmore S Dak
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Dr G Wigg (East Portland) Portland Oregon	G W Ludwig Chambersburg Pa	R C Stover Point Pleasant Pa	J W Earle (Evergreen) Hollands Store S C	R S Person Howard S Dak
Prof S E McClure State University Eugene Oregon	W T Gordon Coatesville Pa	Dr Chas Moore Pottstown Pa	J P McNair Kitchings Mills S C	S W Glenn Huron S Dak
Pacific University Forest Grove Oregon	Dr M H Boye Coopersburg Pa	J L Heacock Quakertown Pa	S H Price Marion S C	A S Stuver Kimball S Dak
J S Gray Gardiner Oregon	Wm Loveland Corry Pa	Franklin Yager Reading Pa	Pickney Brown Martins S C	W T Dale Mellette S Dak
Miss Jennie A Reeher (Glenora) via Bay City Oregon	T H Walton Doylestown Pa	Miss E A G Apple Saegerstown Pa	J E Britt McCormick S C	J C Russell Midland S Dak
J B Paddock Grants Pass Oregon	J R Wagner Drifton Pa	Dr T B Orchard (Salem Corners) Hamlington Pa	T P Ravanel (Pinopolis) Monks Corner S C	J W Strouse Oelrichs S Dak
J H Neal (Happy Valley) Diamond Oregon	Theo Day Dyberry Pa	J A Roth Seisholtzville Pa	W G Peterson (Longshore) Newberry S C	Mrs M F Goddard Onida S Dak
A Smith Heppner Oregon	F C Wintermute East Mauch Chunk Pa	J M Boyer Selins Grove Pa	H D Elliott Port Royal S C	B W Kumler Parker S Dak
Dr P G Barrett Hood River Oregon	Dr J W Moore Easton Pa	B W Dambly Skipack Pa	Dr J H Hamilton Sedalia S C	J S Headley Parkston S Dak
W H Goudy Hubbard Oregon	C F Sweet Edinborough Pa	Armstrong & Brownell Smethport Pa	J E Haltiwanger Selma S C	Jno C Dresson Piedmont S Dak
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J D McCully Joseph Oregon	J C Hilsman (Forks of Neshaminy) Rush Valley Pa	W M Schrock Somerset Pa	J J Lucas Society Hill S C	James F Cross Rosebud S Dak
J K Romig La Grande Oregon	G W Wood Frederick Pa	B M Hall South Eaton Pa	Dr W W Anderson Statesburgh S C	L V Schneider Salem S Dak
Saml T Malehorn Langlois Oregon	E C Wagner Girardville Pa	Prof Wm Frear State College Pa	C A Long Trenton S C	Dr E S Carter Sioux Falls S Dak
L A Miller Lone Rock Oregon	N Moore Grampian Pa	Prof Susan J Cunningham Swarthmore Pa	E L Dantzler Vance S C	J H Warren Spearfish S Dak
Capt W Harris McMinnville Oregon	Wm Shipe Hamburg Pa	Wm Hunt Uniontown Pa	Dr J W Thomas Watts S C	H Richmond Tyndall S Dak
A C Muecke (Miramont Farm) Aurora Mills Oregon	Prof J A Stewart Holidaysburg Pa	H D Deming Wellsborough Pa	J R Schorb Yorkville S C	University of South Dakota Vermillion S Dak
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Dr H W Vincent Toledo Oregon	Prof Wm G Owens Lewisburgh Pa	Thos Dunn Newport R I	H J Bennett Clark S Dak	Miss Mary Smith Bolivar Tenn
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G W Dallas Vernonia Oregon	J T Ambrose Ligonier Pa	J H Walker Pawtucket R I	J E Hennessy De Smet S Dak	Prof J A Lyon Clarksville Tenn
M A Baker Weston Oregon	Prof J A Robb Lock Haven Pa	Office City Engineer Providence R I	A A Humphrey Faulkton S Dak	J I Hall Covington Tenn
	Chas Graves Meadville Pa	Ladd Observatory Providence R I	G A Perly Flandreau S Dak	J C Diemer Fayetteville Tenn

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J H Burrow Lynnville Tenn	Henry T Williams (Flower Bluff) Corpus Christi, Tex	W J Kimball (Stella) Houston Tex	E A English Hartland Vt	W B Mack Aberdeen Wash
C Hawkins McKenzie Tenn	J N Morris Forestburgh Tex	Prof H A Evans Sulphur Springs Tex	Hon Geo E Stratton Hyde Park Vt	Miss Addie Davis Anacortes Wash
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J B Marbury X Nashville Tenn	Post Surgeon (Camp Eagle Pass) Eagle Pass Tex	Dr O Eastland Wichita Falls Tex	Chas W Brown Norwich Vt	W H Mossman Chehalis Wash
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W J Breeding Spring Dale Tenn	F Lusby Hartley Tex	F Blumel (Lake Park) Farmington Utah	D MacGregor Avon Va	Jno W Clendening Fort Simcoe Wash
Lon W Smith Trenton Tenn	P D Saunders Haskell Tex	William Brown Levan Utah	W N Stone Bedford City Va	Post Surgeon Fort Spokane Miles Wash
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N L Bartholomew Albany Tex	G L Stone McGregor Tex	H Crouse Moab Utah	A H Tuttle Charlottesville Va	Observer Weather Bureau X Olympia Wash
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Station.	Observer.	Station.	Observer.	Station.	Observer.
Abilene, Tex.	Allen Buell.	Leavenworth, Kans.	L. A. Welsh.	Corsicana, Tex.	E. L. Gibson.
Albany, N. Y.	A. F. Sims.	Lexington, Ky.	V. E. Muncy.	Cuero, Tex.	Dr. J. M. Reuss.
Alpena, Mich.	H. McP. Baldwin.	Little Rock, Ark.	F. H. Clarke.	Dallas, Tex.	H. P. Berry.
Atlanta, Ga.	Park Morrill.	Los Angeles, Cal.	G. E. Franklin.	Hearne, Tex.	W. A. Snell.
Augusta, Ga.	David Fisher.	Louisville, Ky.	Frank Burke.	Houston, Tex.	D. R. Saunders.
Baltimore, Md.	Dr. C. P. Cronk.	Manchester, N. H.	J. H. Melton.	Huntsville, Tex.	W. Y. Barr.
Bismarck, N. Dak.	Wm. H. Fallon.	Meridian, Miss.	George Hass-Hagen.	Luling, Tex.	J. E. Fisher.
Boston, Mass.	J. Warren Smith.	Miles City, Mont.	H. R. Boynton.	Longview, Tex.	G. W. Krech.
Buffalo, N. Y.	D. Cuthbertson.	Mobile, Ala.	Jas. A. Barry.	Orange, Tex.	J. H. Kelly.
Chicago, Ill.	Dr. H. C. Frankenfeld.	Montgomery, Ala.	S. L. Doshier.	Sherman, Tex.	W. G. Jackson.
Cincinnati, Ohio.	S. S. Bassler.	Montrose, Colo.	P. J. Bolton.	Tyler, Tex.	W. A. Hartel.
Cleveland, Ohio.	W. B. Stockman.	New London, Conn.	R. O. Lazenby.	Waco, Tex.	W. H. Godber.
Colorado Springs, Colo.	U. G. Myers.	Northfield, Vt.	Wm. Line.	Weatherford, Tex.	J. Stickford.
Columbus, Ohio.	C. M. Strong.	North Platte, Nebr.	J. C. Piercy.	Little Rock, Ark. (center).	
Davenport, Iowa.	F. J. Wala.	Oklahoma, Okla. T.	Jas. I. Widmeyer.	Brinkley, Ark.	A. J. Hahn.
Denver, Colo.	J. J. Gilligan.	Oswego, N. Y.	J. G. Linsley.	Forrest, Ark.	J. H. Bard.
Des Moines, Iowa.	Dr. G. M. Chappel.	Palestine, Tex.	M. H. Perry.	Helena, Ark.	A. J. Gaschen.
Detroit, Mich.	E. A. Evans.	Parkersburg, W. Va.	W. W. Dent.	Malvern, Ark.	Miss M. E. Butler.
Dodge City, Kansas.	Geo. T. Todd.	Pensacola, Fla.	E. C. Easton.	Newport, Ark.	R. C. McMann.
Duluth, Minn.	B. H. Bronson.	Pierre, S. Dak.	W. A. Shaw.	Paris, Tex.	C. E. Thorne.
Eastport, Me.	D. C. Murphy.	Point Barrow, Alaska.	L. M. Stevenson.	Pine Bluff, Ark.	J. E. O'Connor.
El Paso, Tex.	N. D. Lane.	Port Angeles, Wash.	Wm. Bell.	Prescott, Ark.	Wm. Friganza.
Galveston, Tex.	Dr. I. M. Cline.	Port Huron, Mich.	Wm. M. Edmondson.	Russellville, Ark.	O. M. Ellsworth.
Hayre, Mont.	Chas. W. Ling.	Portland, Me.	E. P. Jones.	Texarkana, Ark.	M. J. Nash.
Helena, Mont.	E. J. Glass.	Pueblo, Colo.	F. H. Brandenburg.	Memphis, Tenn. (center).	
Huron, S. Dak.	S. W. Glenn.	Raleigh, N. C.	C. F. von Herrmann.	Arlington, Tenn.	A. T. B. Etheridge.
Indianapolis, Ind.	C. F. R. Wappenhans.	Rapid City, S. Dak.	Wm. Norrington.	Batesville, Miss.	J. M. Cox.
Jacksonville, Fla.	E. B. Demain.	Red Bluff, Cal.	John J. McLean.	Bolivar, Tenn.	W. H. McCauley.
Kansas City, Mo.	P. Connor.	Red Wing, Minn.	F. T. Williams.	Brownsville, Tenn.	J. M. Johnson.
Keeler, Cal.	H. E. Wilkinson.	Sacramento, Cal.	J. A. Barwick.	Corinth, Miss.	W. O. Henson.
Key West, Fla.	H. B. Boyer.	Saint Vincent, Minn.	H. W. Grasse.	Covington, Tenn.	W. N. White.
Knoxville, Tenn.	Henry Pennywitt.	San Antonio, Tex.	L. F. Passailaigue.	Decatur, Ala.	J. M. Vickroy.
Lynchburg, Va.	J. N. Ryker.	Sandusky, Ohio.	B. F. Hough.	Dyersburg, Tenn.	D. W. Bethel.
Manistee, Mich.	Arthur E. Hackett.	Seattle, Wash.	G. H. Willson.	Hernando, Miss.	L. B. Jones.
Marquette, Mich.	H. R. Patrick.	Shreveport, La.	C. A. Smith.	Holly Springs, Miss.	N. T. Bryant.
Memphis, Tenn.	W. M. Wilson.	Sioux City, Iowa.	U. G. Pursell.	Milan, Tenn.	O. F. Cantwell.
Milwaukee, Wis.	W. L. Moore.	Southport, N. C.	Louis Dorman.	Tusculum, Ala.	John Lasseter.
Moorhead, Minn.	J. W. Byram.	Springfield, Ill.	John Craig.	Mobile, Ala. (center).	
Nantucket, Mass.	B. A. Blundon.	Springfield, Mo.	T. S. Collins.	Aberdeen, Miss.	O. L. McKay.
Nashville, Tenn.	J. B. Marbury.	Stanton, Fort, N. Mex.	Mrs. M. H. Bailey.	Columbus, Miss.	W. B. McKins.
New Haven, Conn.	H. J. Cox.	Tatoosh Island, Wash.	Frank R. Beahan.	Evergreen, Ala.	Miss Mattie Lee.
New Orleans, La.	R. E. Kerkam.	Titusville, Fla.	Jos. E. Lanouette.	Livingston, Ala.	L. J. Marbury.
New York City.	E. B. Dunn.	Tucson, Ariz.	Wm. Burrows.	Macon, Miss.	B. J. Allen.
Norfolk, Va.	A. B. Crane.	Valentine, Nebr.	John Fitzgerald.	Okolona, Miss.	S. J. Russell.
Olympia, Wash.	H. F. Alciatore.	Walla Walla, Wash.	Fitzhugh Newman.	Thomasville, Ala.	Jas. White.
Omaha, Neb.	Geo. E. Hunt.	Wichita, Kans.	Dr. Fred. L. Johnson.	Waynesboro, Miss.	W. R. McKinley.
Philadelphia, Pa.	L. M. Dey.	Winnemucca, Nev.	Geo. D. Boucher.	Montgomery, Ala. (center).	
Pikes Peak, Colo.	U. G. Myers.	Woods Holl, Mass.	J. P. Slaughter.	Eufaula, Ala.	O. T. Moore.
Pittsburg, Pa.	O. D. Stewart.	Yankton, S. Dak.	A. J. Davis.	Fort Deposit, Ala.	W. L. Van Pelt.
Portland, Oregon.	B. S. Pague.			Marion, Ala.	F. M. Smith.
Rochester, N. Y.	A. L. White.			Opelika, Ala.	W. L. Carmack.
Roseburg, Oregon.	Thos. Gibson.	Astoria, Oregon.	John Grover.	Pine Apple, Ala.	J. B. Raab.
Saint Louis, Mo.	W. H. Hammon.	Auburn, Ala.	Prof. P. H. Mell.	Union Springs, Ala.	T. P. Wade.
Saint Paul, Minn.	P. F. Lyons.	Cape Henry, Va.	J. P. Sherry.	New Orleans, La. (center).	
Salt Lake City, Utah.	Geo. N. Salisbury.	Columbia, Mo.	H. A. McNally.	Alexandria City, La.	L. C. Giffe.
San Diego, Cal.	M. L. Hearne.	Columbia, S. C.	J. H. Harmon.	Amite, La.	Miss Florence Hills.
San Francisco, Cal.	P. T. Jenkins.	Crete, Nebr.	G. A. Loveland.	Brookhaven, Miss.	E. M. Bee.
Santa Fe, N. Mex.	H. B. Hersey.	Currituck Inlet, N. C.	(Temporarily closed.)	Cheyneville, La.	W. W. Wall.
Sault Ste. Marie, Mich.	C. L. Bozell.	East Chatham, Wash.	R. S. Dimmick.	Coushatta, La.	L. M. Howard.
Savannah, Ga.	P. H. Smyth.	Escanaba, Mich.	Wm. N. Van Duzen.	Hazlehurst, Miss.	B. Fugate.
Spokane, Wash.	Chas. Stewart.	Ithaca, N. Y.	R. M. Harding.	Lafayette, La.	J. J. Davidson.
Tampa, Fla.	Thomas J. Considine.	Mico, Fla.	Hal. P. Hardin.	Minden, La.	W. S. Hunter.
Toledo, Ohio.	E. A. Hanner.	Minneapolis, Minn.	E. A. Beals.	Natchez, Miss.	C. Steitenroth.
Vicksburg, Miss.	Dr. Robert J. Hyatt.	Narragansett Pier, R. I.	Mrs. M. E. Conway.	Natchitoches, La.	Sam Levy.
Washington, D. C.	S. W. Beall.	Neah Bay, Wash.	Charles Adie.	Port Gibson, Miss.	H. H. Crisler.
Washington, N. C.	F. P. Chaffee.	New Brunswick, N. J.	E. W. McGann.	Savannah, Ga. (center).	
Yuma, Ariz.	A. Ashenberger.	Point Reyes Light, Cal.	Louis A. Muhler.	Albany, Ga.	J. S. Clark.
		Port Crescent, Wash.	Otto B. Hart.	Alapaha, Ga.	C. I. Jones.
		Pysht, Wash.	J. P. Fallihee.	Americus, Ga.	L. A. Smith.
		Topeka, Kans.	T. B. Jennings.	Bainbridge, Ga.	J. E. Peacock.
		Vineyard Haven, Mass.	W. W. Neifert.	Cordele, Ga.	W. D. Webster.
		Special Cotton Region Stations.*		Eastman, Ga.	C. H. Peacock.
		Atlanta, Ga. (center).		Fort Gaines, Ga.	S. E. Lewis.
		Columbus, Ga.	J. W. Long.	Gainesville, Fla.	James Bell.
		Gainesville, Ga.	R. T. Murphy.	Millen, Ga.	J. R. Sheppard.
		Greenville, S. C.	Mrs. S. A. Crittenden.	Quitman, Ga.	A. W. Thomas.
		Griffin, Ga.	W. B. Stuart.	Thomasville, Ga.	Robt. Thomas, Jr.
		Macon, Ga.	W. M. Craven.	Way Cross, Ga.	F. L. Hall.
		Newnan, Ga.	Nora M. Avery.	Vicksburg, Miss. (center).	
		Spartanburg, S. C.	F. P. Robinson.	Greenville, Miss.	W. M. Greene.
		Toccoa, Ga.	J. A. Glenn.	Jackson, Miss.	R. C. Wright.
		West Point, Ga.	T. J. Jennings.	Lake, Miss.	Miss Willie Wilkins.
		Augusta, Ga. (center).		Monroe, La.	W. W. Renwick.
		Allendale, S. C.	C. B. Farmer.	Rolling Fork, Miss.	S. W. Langford.
		Athens, Ga.	W. D. Hammet.	Wilmington, N. C. (center).	
		Batesburg, S. C.	D. P. Hartley.	Cheraw, S. C.	W. R. Godfrey.
		Blackville, S. C.	S. S. Turner.	Florence, S. C.	P. H. Walsh.
		Camak, Ga.	J. A. Chapman.	Goldsboro, N. C.	Miss Nettie Thomas.
		Greenwood, S. C.	F. H. Heidt.	Greensboro, N. C.	A. M. Perkins.
		Union Point, Ga.	R. F. Bryan.	Lumberton, N. C.	B. M. Davis.
		Washington, Ga.	Miss Nellie Summers.	Newbern, N. C.	W. G. Boyd.
		Waynesboro, Ga.	H. W. Blount.	Weldon, N. C.	T. A. Clarke.
		Charleston, S. C. (center).		Sugar and Rice Stations.†	
		Hardeeville, S. C.	W. J. Evans.	New Orleans, La. (center).	
		Kingsree, S. C.	T. F. Willis.	Baton Rouge, La.	H. A. Morgan.
		St. Georges, S. C.	W. G. Sease.	Covington, La.	F. W. Hosmer.
		St. Matthews, S. C.	J. S. Wannamaker.	Donaldsonville, La.	W. D. Park.
		Youngs Island, S. C.	E. L. Commins.	Franklin, La.	E. M. Cornay.
		Galveston, Tex. (center).		Lake Charles, La.	Wm. Meyer.
		Belton, Tex.	A. J. Embree.	Opelousas, La.	W. A. Sandoz.
		Brenham, Tex.	J. G. Sloan.	Rayne, La.	I. A. Smith.
		Columbia, Tex.	J. S. Rogers.	Schriever, La.	John T. Moore, Jr.

NOTE.—The stations from Abilene to Yuma take two observations daily, and furnish continuous records of wind-direction and velocity, precipitation, temperature, barometric pressure, etc., by means of self-registering instruments. The stations from Amarillo to Yankton take two observations daily, and maintain a continuous record of wind velocity. The stations from Astoria to Vineyard Haven take one observation daily in addition to other special duties. * Take one observation daily from April 15 to November 30 each year, and telegraph it to district centers.